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# MOTOR AGE

JULY 1944



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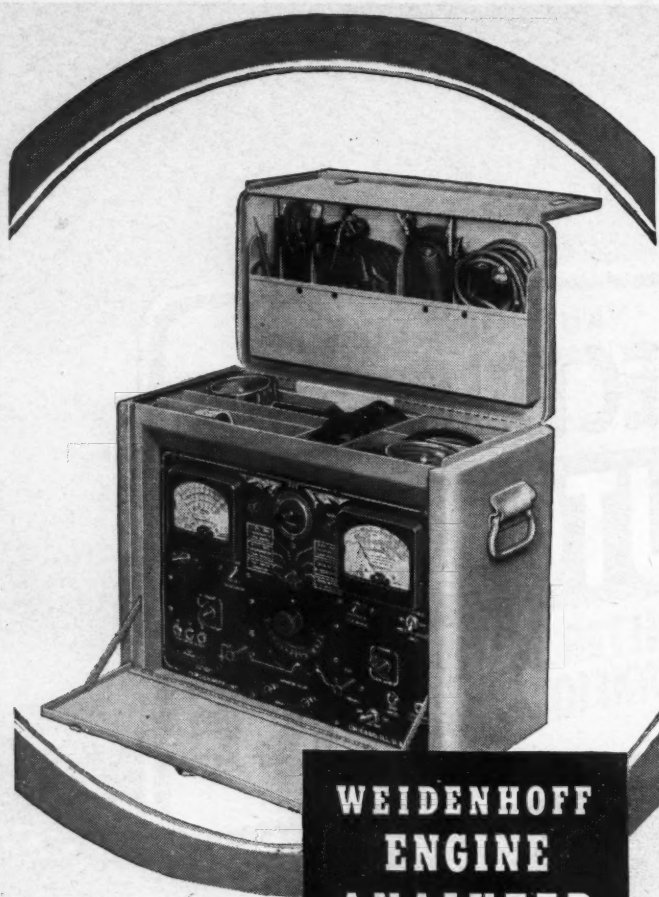
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# MOTOR AGE

With Which Is Combined **AUTOMOBILE TRADE JOURNAL**

**FOR AUTOMOTIVE SERVICEMEN**

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July, 1944

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# SLANTS ON THE News

## OPA Finally Puts Ceiling Over Used Car Prices

CAR dealers at last have heard the other shoe fall. The first dropped in April last year when used trucks were placed under price ceilings. Now, after numerous conferences with the trade, rumors, threats, and guesses, the OPA has extended its protection to used passenger cars. It is one instance in which a Washington bureau kept its word; it gave such a variety it could hardly escape keeping one.

The new ceilings will satisfy few persons, certainly not the bulk of dealers, who have opposed the move at every opportunity. The warranty, which must be given if a dealer is to be allowed to charge the "warranty" price, met the strongest opposition from dealers but it is included in the new regulation, with some modification. As originally written, the warranty would have permitted the buyer to have repairs made during the warranty period at any shop and then bill the dealer who had sold the car. Later, the OPA relented and offered a proviso that the repairs could be made only in the seller's shop. As the warranty now stands, the seller must assume only half the cost of the repairs or replacements.

As protection for the buyer

against soaring prices, the regulation comes a little late. By the OPA'S own admission, prices climbed 20 per cent in the last year and 30 per cent in the last 18 months. If dealer feeling in the matter was to be ignored anyway, ceilings could have been imposed in January, 1943, and the white-collar workers, school teachers, and civil employees, in whom the OPA now professes such deep interest, thus saved millions of dollars.

## Octane Numbers Lower For All Grades of Gas

FOR the serviceman who wishes to have some answer for the customer who complains that his car, in spite of adjustments and tune-ups, doesn't have the pep it used to have or has developed the annoying habit of ping at the slightest provocation, the recent report of the Bureau of Mines on gasoline characteristics makes helpful reading.

During last winter, the bureau found, as the result of 1,356 sam-

Post-war forecasts are as plentiful as cigars before election. Both new-car sales and service are going to set new records, they say. But how much of this business are YOU going to get? An interesting answer to this and similar questions is contained in the timely article that begins on Page 20.

ples taken from the products of more than 100 refiners, that the octane rating of gasoline have slumped noticeably within the year. The average octane number of premium-grade gas was only 75.8, compared with 79.6 for the winter of 1942-43. Regular grade had an average rating of 71.7, compared with 72.5, while third-grade gas fell from 63.1 to 60.5.

The ratings during last winter varied somewhat in different sections of the country but, in the case of premium grade, the variation was slight. The lowest was 75.1 in the northern Rocky Mountain area, the highest 76.8 in the Atlanta, Ga., area, including Alabama, Mississippi, Florida, and South Carolina. The variation of regular grade gas was greater, ranging from 69.5 in the middle Rocky Mountain area to 73 in the Memphis, Tenn., area.

## New GM Dealer Contracts Point Way to Progress

IN one respect, at least, the new sales agreements being offered General Motors dealers represent a distinct gain. That is the total elimination of the provision which, in present contracts, permits the termination of the agreement without cause. Termination clauses have

been one of the sore spots of dealer-factory relationship.

Since the new agreements are to run for the stated term of two years after the resumption of new-car production, dealers signing them can make their post-war plans with confidence, knowing that their principal asset is not going to be pulled from under them without sufficient cause.

Few dealers will regard the concessions contained in the new GM agreements as the fulfillment of their hopes regarding relations with car factories. Many will insist that the licensing and uniform-contract laws which they champion must be enacted if the dealer is to survive the fierce competition of the post-war era. Time alone will decide whether these laws are so desirable as they may seem at the moment. Nevertheless, it is encouraging to note that the step taken by GM toward better dealer-factory relations was taken voluntarily, without the recriminations and bitterness that have characterized such dealings in the past. It is entirely possible that other differences between dealers and factories can be erased with as little to do.

### **Sloan Foresees Early New-Car Production**

**E**XPECTATION that new-car production will be given the green light by the WPB within the near future was expressed June 21 by Alfred P. Sloan, General Motors chairman, in an address before a luncheon meeting of the New Jersey State Chamber of Commerce, at which he and other General Motors officials were guests.

"We are now preparing plans for the WPB to contemplate returning to civilian production in automobiles to the extent of two million cars a year," said Sloan. "Just when that will take place I don't know, but I rather think that it will come very quickly."

Sloan added that the corporation would rather not reconvert "in two bites," but said that it must be

done. When the war with Germany ends, he said, the demands on American production will be reduced by at least 50 or 60 per cent.

### **Wounded Veterans Ready To Return to Jobs in Shop**

**S**OURCES from which additional help may be recruited have been shrinking steadily ever since war began and, until recently, had been restricted to women and youths. For a time, the men over 38 released by the Army supplied a dribble of manpower but even this has dried up.

The Kansas City Automotive Trades Association reports that the Veterans Rehabilitation Administration is now in position to supply a few recovered veterans to automotive shops. Probably the number that will seek automotive work is not large but it is a possibility shop operators ought not to overlook.

### **McNutt Rows with Self On Manpower Shortage**

**T**HE War Manpower Commission instituted its priority referral plan on July 1 because Manpower Boss Paul V. McNutt early in June found that a labor shortage was threatening the successful prosecution of the war.

Later in June, Federal Security Commissioner Paul V. McNutt reported that unemployment shows signs of increasing. As long ago as March, he said, the number of person receiving unemployment insurance had increased 8 per cent in a single month.

This is a relief from the repeated disagreement among heads of bureaus. Here is a case of the head of two bureaus disagreeing with himself.

Despite the amount of goading that Washington sometimes thinks necessary, Americans are united in their determination to win the war. They are demonstrating this determination on battlefields around the world and in war work at home.

They might even accept without grumbling the WMC edict that male workers in the United States are no longer intelligent enough or patriotic enough to do their share and so must be herded into jobs the WMC picks out for them. They might, that is, if the WMC could offer convincing evidence a labor shortage exists throughout the country. McNutt's admission that unemployment is increasing hardly strengthens the WMC's case.

Although McNutt has declared that employers and employees would be restricted as little as possible by the new regulations, the effect upon both management and labor in some cases will be as drastic as a labor draft. Congress has steadfastly refused to go along with plans to fetter both employer and worker with compulsory service. Undismayed, the WMC has taken the ball away from Congress, just as the SWPA snatched it away from Congress in the disposal of surplus war goods.

It will do businessmen no harm to remember that the priority referral plan is another link in the chain being forced about business initiative. By refusal to refer workers to his plant, the USES could wield the power of business life or death over any employer.

Such a situation would be intolerable in peacetime. And it will become intolerable even in wartime the moment the WMC fails to prove its necessity.

### **Owners Willing to Wait A Year for New Models**

**A** NEW twist to the commonly accepted belief that every car owner will demand a new vehicle as soon as the war is over is given by a consumer survey conducted recently by the *Milwaukee Journal*.

Although the study was limited, naturally, to the single city of Milwaukee, it revealed that 61.5 per cent of all the families questioned intend to buy new cars when production is resumed. However, further questioning revealed that not

all of them are going to line up in front of a dealer's the day fighting stops.

Only 4.1 per cent expressed a desire to buy new cars within 30 days, and only 37.6 per cent between six months and one year. Of all those who intend to buy a new car, 58.3 per cent had decided to defer its purchase until a year or more after new models become available.

### More Liberal Gas Rations Are Recommended by AAA

POINTING out that there is more gasoline in retail outlets than is being dispensed to holders of legitimate ration coupons, the American Automobile Association has recommended to the Office of Defense Transportation that inequities in the present allotments of gasoline be remedied immediately. The five specific recommendations are:

1. An increase of present "A" rations in the interests of car conservation.
2. Equalization of "B" coupon rations on a national basis.
3. Readjustment of "B" rations, where it can be shown that the holder is not able to get 15 miles a gallon.
4. More gasoline for light delivery trucks for home deliveries, thus saving gas used by "A" book holders on shopping trips.
5. An increase in the 5-gal. thorough allowance for service men.

"There is a widespread belief today," said Thomas P. Henry, AAA president, "that the military authorities have built up enormous reserves against coming contingencies; that military storage and transportation lines are now so filled with petroleum products of all kinds that the possibility of civilian relief should be reviewed afresh."

Impressions, reports, and rumors are not always in accord with the fact, but the point raised by the AAA, like that of the original Baruch report on rubber, is that sacrifice should not be demanded of

the American people unless the need for it can be clearly shown.

It is interesting to note, also, that the AAA, completing a survey made in connection with its "Keep 'Em Rolling" demonstration, reports that war workers, for whom most automotive rationing rules have shown the greatest solicitude, disregard all wartime speed regulations and are "indifferent to any and all measures of car conservation."

If the charge be true, and many repair-shop operators have found it so, it is one that ought to be borne in mind by all rationing officials.

### Specialized Training Now Offered by ODT Schools

REPAIR-SHOP operators, who would prefer to hire mechanics or helpers trained on the particular make of car or truck in which they specialize, now have the opportunity, according to an Office of Defense Transportation announcement.

Vocational training schools now cooperating with the ODT will conduct special classes in maintenance and repair of particular cars or trucks, if the shop can supply at least ten students. Vocational training classes are now being offered by the ODT in 200 cities. Sponsored by the U. S. Office of Education and conducted by public vocational schools, they deal not only with pre-employment training but also with supplementary courses.

Shop operators who have complained that training in the vocational schools heretofore has been too general may find that the specialized courses now offered will solve their problems.

---

Repair tires by electronics? Certainly. On Page 23 you will find an interesting discussion of this war-born method of doing an old job faster and better. The sometimes trying task of diagnosing clutch troubles is made a lot simpler by watching for the symptoms listed in the chart that starts on Page 28.

---

### New-Car Maintenance Pays Off in Good Will

BECAUSE the addition of increment to the sale price of new 1942 passenger cars ceased April 30, dealers are hardly justified in failing to maintain vehicles still on hand in accordance with order M-216. A certain number of vehicles must be displayed but the WPB frowns of displaying more than a 90-day supply, and seems disposed to question the addition of increment for the period up until April 30 unless the vehicle sold has been properly maintained. New regulations governing maintenance could be issued by the board, but the dealer's own interest ought to make this unnecessary.

It is true that the scarcity of automobiles has made the public less critical of the products they buy today; but one who takes delivery on a car and finds that it has not been properly maintained is going to remember the fact when peace returns.

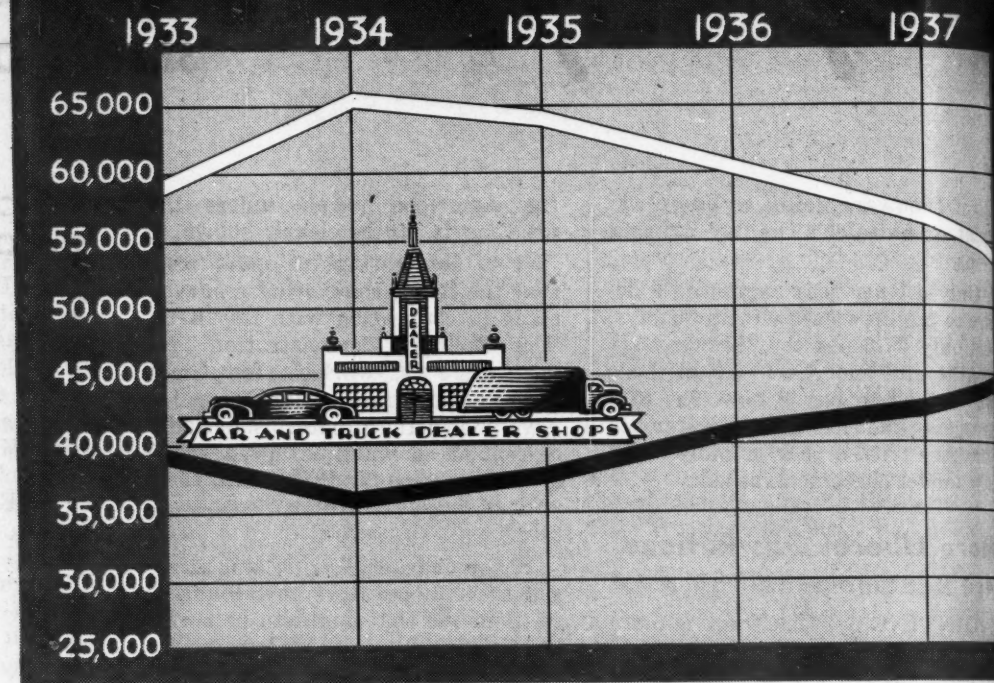
### Civilian Truck Output Gets Under Way at Last

SOME relief for victims of the truck famine is contained in the announcement by John H. Middlekamp, WPB Automotive Division director, that 9,200 commercial vehicles for civilian use were produced in May, a total that compared favorably with the output of only 10,000 in the entire first quarter. He further announced that the production program for the year had been increased 8,000, thus contradicting reports that the program was being slashed 25 per cent. Automotive Division officials were confident that the enlarged goal would be reached.

Further encouragement is given by the creation of a National Foundry and Shop Forge Committee, representing five federal agencies directly concerned with the critical manpower problems that are hindering production in foundries and forge shops. Malleable and gray-

(Continued on page 64)

## WAR'S EFFECT ON



# Competition for Vast Post-War Market to be Keen

**T**HAT post-war volume of both car sales and service will hit new highs is a fairly safe prediction. Provided, of course, that the economy of the country does not do a tailspin.

When discussing car sales in the period following the war GM's Charles E. Wilson stated that, in the first year after car production gets into full swing, he expects his corporation to produce from 25 to 50 per cent more cars than ever before in any one year. If this same increase can be applied to the entire industry, it would mean sales of 4,780,000 to 5,600,000 cars, based on 1941 sales.

That's a lot of cars and doesn't seem at all excessive when it is remembered that new cars have not been produced since 1942 and, consequently, there should be an enormous pent-up demand.

During the pre-war period, cars

**Increased numbers of independent and dealer shops will bid for huge volume**

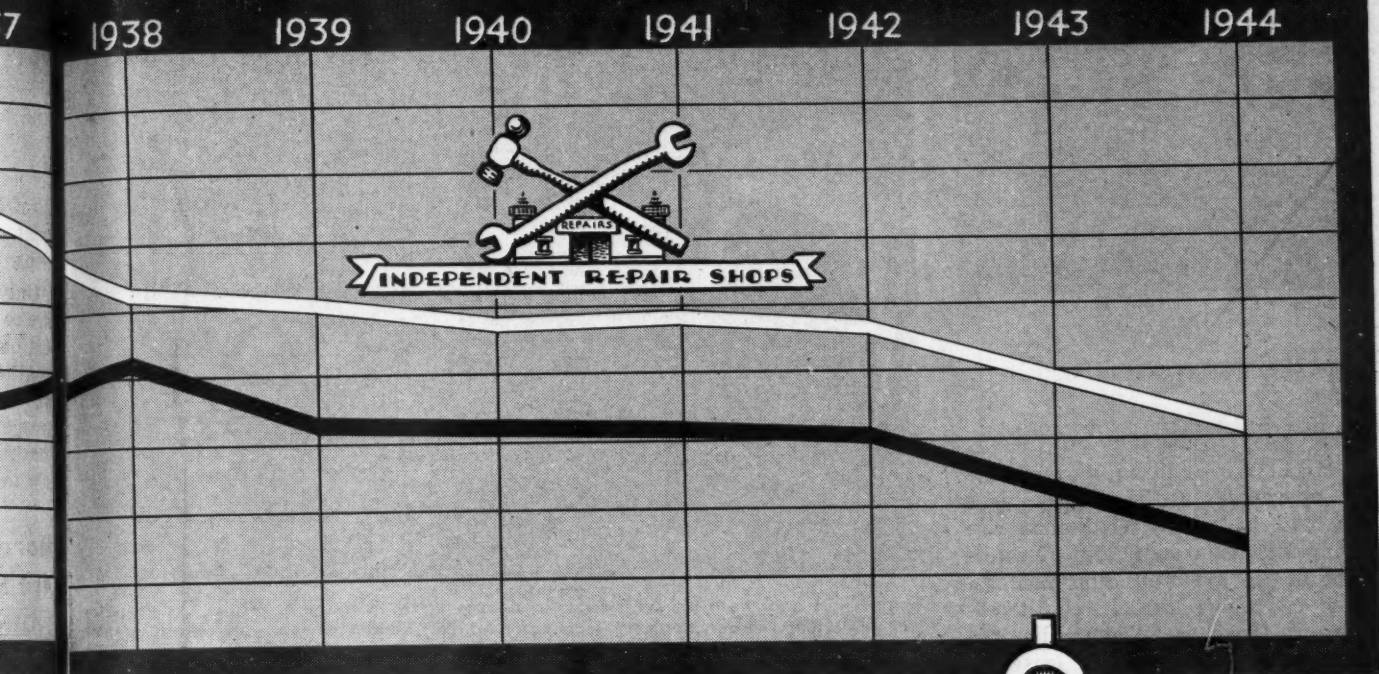
**By BILL TOBOLDT**

were scrapped at the rate of approximately 2¼ million per year. In 1942, however, this dropped to 2 million, while in 1943 approximately 800,000 were junked. If an additional 800,000 cars are junked during the current year, the total deficit of cars, due to scrapping alone, will be at least 3,600,000. To this should be added the normal demand for new cars in order to obtain the total demand for new

cars. So, by adding the total number of cars scrapped during the war to the new cars sold in 1940 (3,292,000), we have a grand total of 6,892,000 cars. That figure is of course, materially greater than the 25 to 50 per cent increases predicted by Charles E. Wilson and is given here only to emphasize the sales possibilities in the period following the war.

(Continued on page 62)

# ON NUMBER OF REPAIR SHOPS



## Total Motor Vehicle Registrations

(As of December 31 each Year)

STATE	1943	1942	1941	1940
Alabama.....	355,600	367,108	358,059	323,102
Arizona.....	136,493	143,380	144,401	138,538
Arkansas.....	267,495	288,348	290,249	257,177
California.....	2,629,588(a)	2,723,297	2,868,958	2,701,505
Colorado.....	347,434	363,260	367,746	352,108
Connecticut.....	477,457	514,796	551,101	485,907
Delaware.....	68,212	69,181	97,019	70,454
District of Columbia..	137,063	160,775	174,076	161,914
Florida.....	372,110	501,429	555,434	495,210
Georgia.....	518,927	541,387	561,191	508,105
Idaho.....	148,567	156,562	171,031	162,898
Illinois.....	1,814,471	1,981,639	2,059,845	1,936,401
Indiana.....	976,140	1,044,522	1,066,519	994,082
Iowa.....	710,312	760,872	821,569	790,551
Kansas.....	606,659	625,479	618,453	582,673
Kentucky.....	438,000	462,883	497,427	463,727
Louisiana.....	409,150	410,098	443,920	365,429
Maine.....	187,720	200,144	222,367	205,896
Maryland.....	454,423	492,836	491,271	448,695
Massachusetts.....	827,078	919,838	961,639	904,423
Michigan.....	1,270,016	1,326,559	1,274,140	1,195,034
Minnesota.....	788,405	845,076	902,924	871,351
Mississippi.....	249,403	248,336	267,233	259,013
Missouri.....	865,227	954,188	984,626	921,269
Montana.....	160,809	175,331	198,732	191,032
Nebraska.....	407,396	417,130	426,568	416,289
Nevada.....	49,300	50,406	48,160	33,078
New Hampshire.....	111,673	129,285	142,404	135,384
New Jersey.....	1,003,856	1,108,912	1,165,916	1,086,966
New Mexico.....	116,030	115,916	129,871	126,131
New York.....	2,228,260	2,626,761	2,860,912	2,778,713
North Carolina.....	592,000	623,467	656,159	591,946
North Dakota.....	179,472	184,186	192,919	182,922
Ohio.....	1,929,401	2,062,742	1,992,000	1,918,929
Oklahoma.....	510,366	552,253	586,743	573,282
Oregon.....	408,412	417,566	429,440	393,578
Pennsylvania.....	2,008,234	2,169,745	2,281,307	2,128,284
Rhode Island.....	182,960	191,449	195,704	181,325
South Carolina.....	334,671	345,300	364,369	312,351
South Dakota.....	182,289	189,363	202,683	195,667
Tennessee.....	422,000	466,063	505,983	447,983
Texas.....	1,559,581	1,615,509	1,810,861	1,693,881
Utah.....	158,239	153,954	150,541	141,365
Vermont.....	81,659	87,745	97,486	93,645
Virginia.....	507,748	534,381	553,380	488,972
Washington.....	596,329	610,309	617,030	571,230
West Virginia.....	257,606	296,006	301,783	302,558
Wisconsin.....	832,467	831,533	968,813	899,325
Wyoming.....	82,659	86,904	91,975	86,046
Total.....	29,959,367	32,144,209	33,720,937	31,566,324

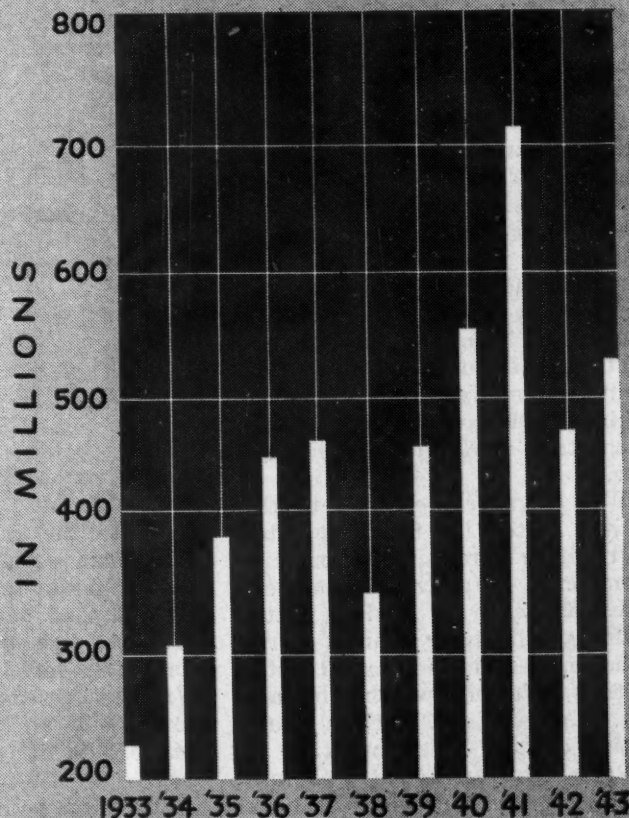
(a)—Does not include 119,313 vehicles originally registered in other states for 1943 and 111,511 for 1942.

(MOTOR AGE COUNT)



## WHOLESALE VALUE OF PARTS AND ACCESSORIES PRODUCTION

(DOES NOT INCLUDE EXPORTS OR DIRECT SALES TO GOVERNMENT)





**R**PAIR, rebuilding, and salvage operations in the automotive field by Army Ordnance are saving the American taxpayer millions of dollars annually and, by reuse of repaired and rebuilt vehicles within the Army, the demand for new vehicles is lessened considerably.

Material collected from the battlefields includes every conceivable type of equipment, in addition to motor vehicles. As ships are available, the salvage and scrap material is returned to this country. It is received at seven salvage segregation centers, located at Boston, Brooklyn, Frederick, Md.; New Orleans, Seattle, San Francisco, and Los Angeles. Here reclaimable material is separated from scrap.

A great deal of reclaimable material is kept overseas and used there in many ways. For example, several Ordnancemen in England put together an improvised forge which they cut from a salvaged truck cab. Soldiers built a washing machine from scrap parts of jeeps and heavy-duty trucks. Some ingenious Ordnancemen use 400 BTU manufactured gas to run rebuilt automotive motors during their "breaking in" period in the shop, thus saving valuable gasoline.

With material returned to the United States, the first step after segregation of reclaimable material from scrap is for the various services of the Army to claim materials used by their branch. Ordnance is responsible for all automotive equipment, whether belonging to Army, Navy, Marines, Coast Guard, or Lend-Lease countries.

Parts that can be put back into use are sorted out and sent back to checking points for eventual re-



Engines just back from the battlefields in storage at the Fort Lewis, Wash., Ordnance Depot where they will be completely reconditioned. Left, Ordnance men work on truck engine.

## From Scrap Pile to Front Lines

**Highly organized Ordnance salvage system enables damaged vehicles from many fields to fight again**

**By GENE HARDY**

issue to the various echelons of maintenance and depots. In one month, one of the segregation centers shipped out thirteen 1½-ton vans of general-purpose (non-combat) vehicle repair parts. Wrecked assemblies are broken down to obtain all parts that can possibly be reconditioned and reused.

From this point on, the material becomes so intertwined with sal-

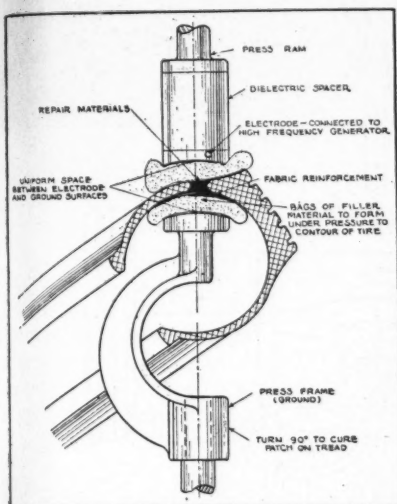
vage operations in the United States that it is best to consider the procedures as one.

Ordnance men say there is a distinct problem in disposing of non-functional parts, accumulated in the break-down of damaged vehicles. Manufacturers do not want them and since, in many cases, there are more of them than can be used by the Army they must be

*(Continued on page 52)*

# Electronic Tire Repairs

Even heat developed all the way through casing  
by high-frequency current improves vulcanizing



as all particles located near the center of the mass, as well as those at the surface, are treated simultaneously and at the same rate. Col. Vogt states that not only are better tire repairs possible by means of electronic heating, but also that the time required to do the job is materially reduced. Furthermore, the equipment is smaller and more compact and consequently considerably more work can be turned out from a given floor area.

When making a sectional repair, the section to be heated is placed between two electrodes and the variation in thickness between tread corner and side wall is compensated for by a bag containing a flowable material which is also noncompressible. This bag automatically forms a mold of the proper shape and permits uniform pressure to be applied to the patch area.

When making a spot repair by this method, both electrodes are placed at the outer surface of the tire.

This method of repairing tires was developed by Colonel Vogt while he was coördinator of overseas tire repair and was the direct result of requests from overseas for equipment having greater flexibility as to sizes and at the same time greatly reduced weight of equipment so that tire repairs could be made nearer the fighting front. During the experimental work, it was established that temperature variation in some type molds ranged from 12 to 50 degrees on the outside tire surfaces between the top and the bottom of the tread and Colonel Vogt pointed out that greater differences prevail within the interior portions of

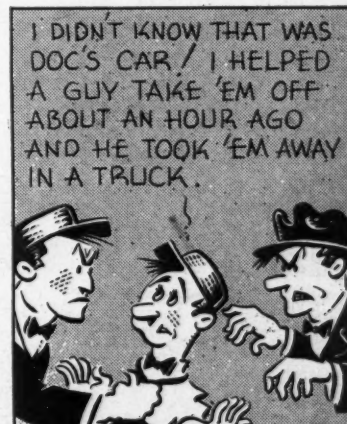
(Continued on page 76)

**V**ULCANIZING and repairing tires by means of electronic heat has been developed by Lt. Col. E. W. Vogt, of the U. S. Army. The method was described and demonstrated at the National Transportation Meeting of the Society of Automotive Engineers in Philadelphia late in June.

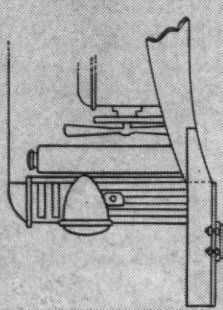
In the past, tires have been vulcanized by the external application of heat, generated by either steam or electricity. When repairs are made in that manner, the heat passes by conduction from the hot mold and then through the tire. Obviously that portion of the tire in contact with the hot mold will have the highest temperature and more time is required for the tire to reach vulcanizing temperature.

Electronic heating changes this, as all sections of the repair have the same temperature throughout,

BUTCH . .

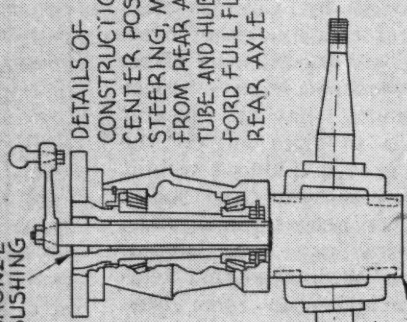


SIDE VIEW OF PLATE EXTENSION ON FRAME FOR CENTER POST STEERING SYSTEM



BRONZE BUSHING

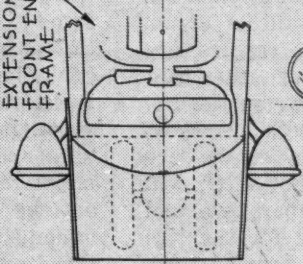
DETAILS OF CONSTRUCTION OF CENTER POST STEERING, MADE FROM REAR AXLE TUBE AND HUB OF FORD FULL FLOATING REAR AXLE



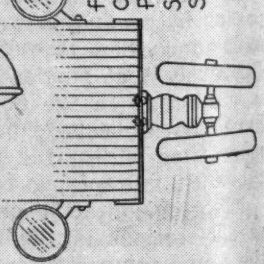
SPINDLES ARE WELDED INTO INVERTED "U" SHAPED PIECE WHICH IN TURN IS WELDED TO END OF CUT OFF AXLE

"U" SHAPED PIECE WELDED TO END OF AXLE SHAFT

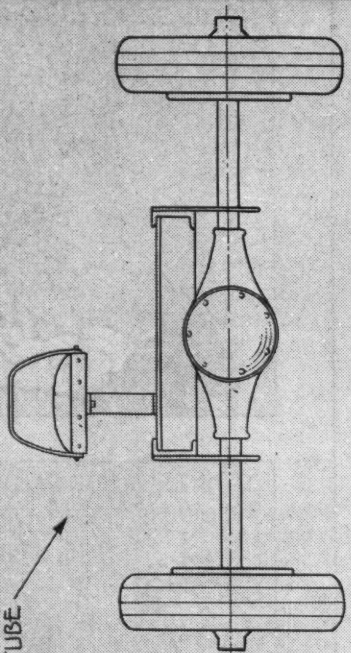
TOP VIEW OF PLATE EXTENSION ON FRONT END OF FRAME



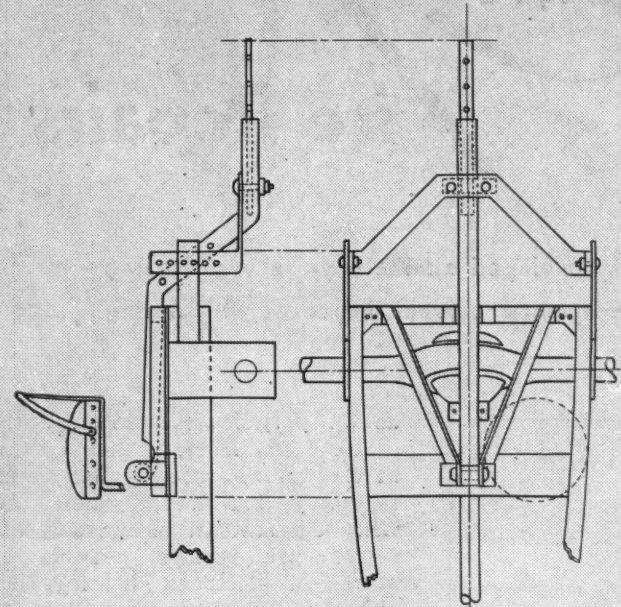
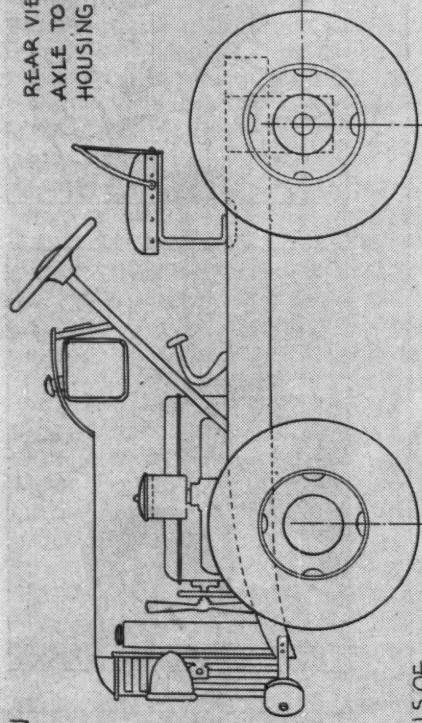
FRONT VIEW OF CENTER POST TYPE STEERING SYSTEM



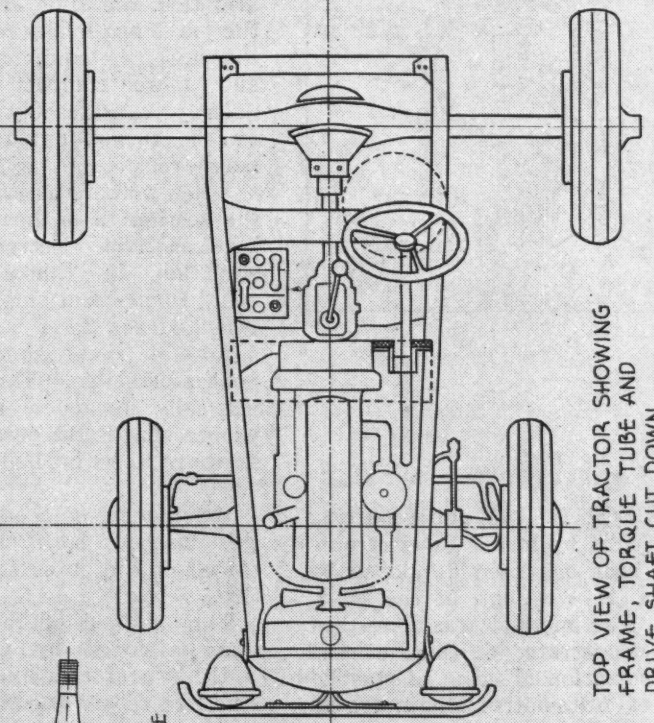
REAR VIEW SHOWING METHOD OF ATTACHING REAR AXLE TO FRAME BY WELDING PLATES TO THE AXLE HOUSING TUBE



SIDE VIEW OF TRACTOR SHOWING CONVENTIONAL FRONT AXLE, GAS TANK AND SEAT MOUNTING



DETAILS OF CONSTRUCTION OF DRAW BAR AND FRAME BRACING



TOP VIEW OF TRACTOR SHOWING FRAME, TORQUE TUBE AND DRIVE SHAFT CUT DOWN

# Assembling a Tractor from Old Truck Parts

**By combining serviceable units from scrap vehicles, serviceman can help supply vitally needed farm machines**

**BY BOB TURNER**

**M**ANY repair shops have helped to alleviate the shortage of farm equipment by building tractors from discarded automotive units. These units, while not as satisfactory as the factory-built equipment, have shown a surprising capacity for hard, rugged work. Naturally, much depends on the units selected and on the quality of workmanship used in building these "home-made" tractors. However, until factory-built units are again available in quantities sufficient to meet the demand, many repair shops are helping the farmer by building tractors from discarded automotive parts.

In selecting the automotive units to be used in constructing a tractor, there are a number of factors which must be taken into consideration. If the unit is to be used for light work, such as towing other equipment around the farm, the units selected may be lighter than those necessary for a tractor to be used as a general-purpose job, which would include plowing and other very heavy work.

For a general-purpose tractor, a good combination of units would be the engine, clutch, four-speed transmission and two-speed rear axle from a 1940 Chevrolet truck. It should be kept in mind that the rear axle selected ought to have as low a gear ratio as possible. The average rear axle ratio used on tractors is 11 or 12 to 1. The Chevrolet two-speed axle selected here has a low ratio of 8.22 to 1. The type of two-speed axle that utilizes the torque tube drive is to be preferred. The torque tube may

be cut down just back of the slip joint to give a very short coupling between the transmission and rear axle. If it is possible to obtain the truck frame for these units, much labor and expense can be saved, since it is only necessary to cut the frame at the proper point to mount on the rear axle. If it is not possible to obtain the truck frame, the side rails may be made from the channel iron of not less than 4-in. section. Since no springs are used, the frame may be attached to the axle either by welding upright plates to the spring saddles or by welding the plates to the axle housing. These plates, which should be ½-in. steel, can be made high enough to allow the frame to set level.

The brakes, as installed, are operated by a single master cylinder. This should be changed and two master cylinders and brake-pedal assemblies installed to give independent braking on each wheel. This will enable the operator to make the sharp turns necessary in some types of work.

The Chevrolet four-speed transmission is provided with a power-take-off cover and a standard power-take-off unit may be installed which can perform a great

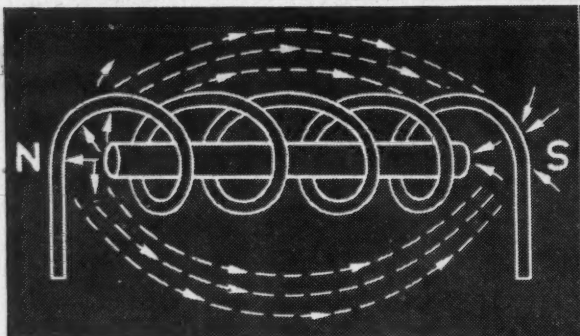
amount of extra work.

It will be necessary to make a new cowl panel on which to mount the oil gage, ammeter, temperature gage, ignition switch and, if the tractor is to be used for night work, the light switch. A gas tank can be made by either cutting down a regular tank or by making a new one of sheet metal to fit in the space between the cowl and the engine. If the original truck frame is used, the battery may be mounted in the regular hangar. If a new frame has been made, the simplest method of mounting the battery would be to use one of the long-type batteries and mount it on the frame side rail next to the engine.

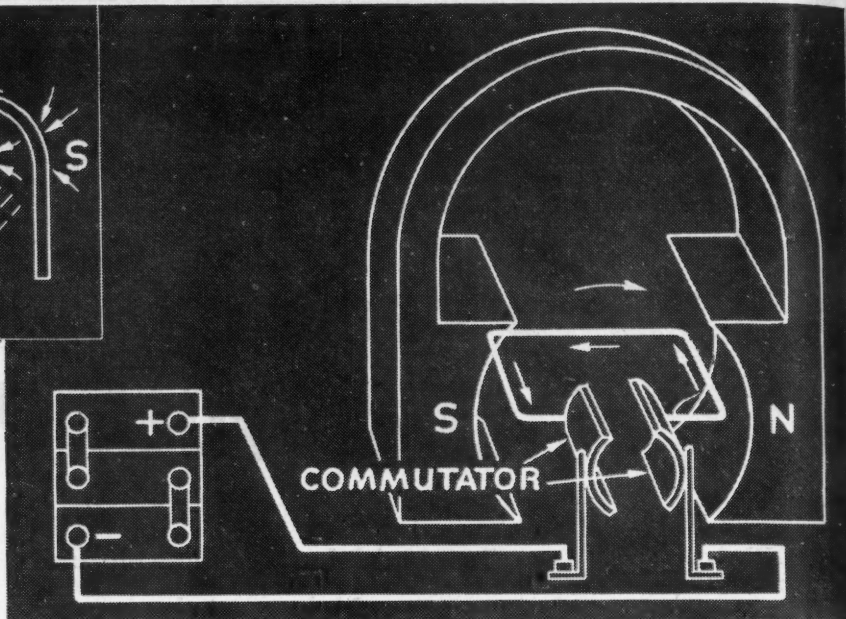
The radiator must be either the original truck equipment or one of greater capacity. Do not attempt to use a passenger-car radiator, or difficulty with overheating will be experienced.

If the conventional front axle is used, it must be rigidly fastened to the frame. This may be accomplished by installing a spacer between the axle and spring and making new "U" bolts to go around the frame and through the spring seat of the axle. If the steering system desired is the double-wheel vertical-post type, it will require more work but can be constructed from standard automobile parts. The vertical-post assembly can be made from one side of the rear-axle housing and hub of a full-floating Ford truck rear axle. As shown in the illustration, the axle housing can be cut off just back of the brake backing-plate flange

(Continued on page 64)



Method of magnetizing a bar of iron by passing a current through wire wound in the form of a helix. This is the solenoid principle.



Elementary design of a generator, showing flow of current induced by rotation of wire loop.

ON his way out of the shop after quitting time, Tommy Winters saw that Pop O'Neill was still at work in the office and went in. Pop was getting into the habit, now that the rush of service work was becoming too great to be handled comfortably, of doing his bookkeeping and other office chores after hours. At the moment, he was checking bills. As he finished, he took a big check book out of the center desk drawer. Tommy shifted his feet and Pop looked up.

"I'm sorry," he said. "I can't give you no more money."

Tommy's eyes widened in surprise. "But I'm not asking for a raise."

"You're not? Well, I'm glad of that. I kinda thought you was because that's the only thing any of the mechanics ever hang around for after the whistle blows." He laid the check book aside. "What's on your mind, then?"

"I just want to get a little dope on ignition coils," answered Tommy. "Larry Tate asked me to put a replacement coil in a job for him this afternoon and I had some trouble getting the leads right and he got pretty sore about it. I'd like to know how they work, so I could put one in right the next time."

"Hmm," said Pop. "Larry's workin' pretty hard these days and I guess he gets pretty short at times. Just what is it that's troublin' you about coils?"

"Well," said Tommy, "what makes them work? Larry started talking about primary windings and high-tension leads and all that stuff and I got more mixed up than I was before."



"Sit down a minute," said Pop. "It looks like we'll have to get some other things straightened out first. To start with, we've got to know how electricity works. I was gonna say 'what electricity' is, but nobody knows that. All we know is how it behaves. You know what a magnet is, don't you?"

"Sure," said Tommy, taking a chair beside Pop's desk. "It's a piece of steel that draws other pieces of steel or iron to it."

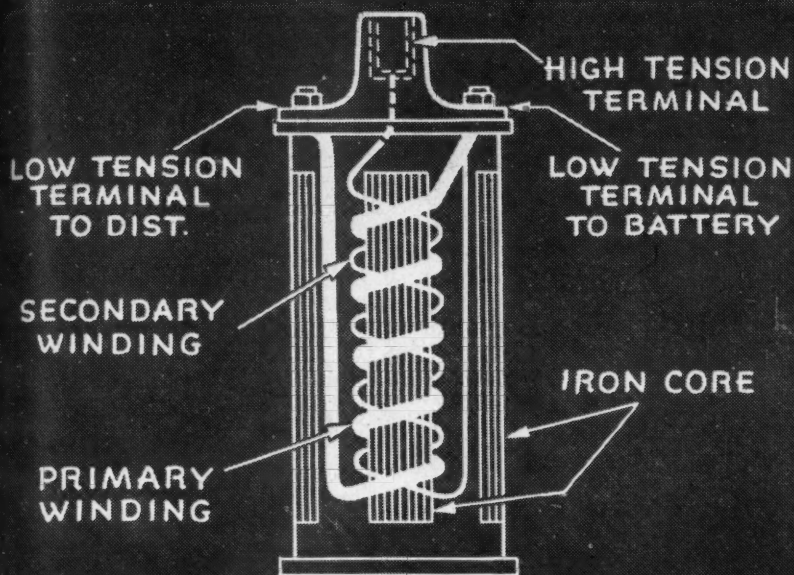
"That's a \$64 answer. But the fact that a magnet attracts iron and steel ain't what makes it such a wonderful gadget. The thing that makes it important is what engineers call 'lines of force.' You see, every magnet has two poles, a

north pole and a south pole. The north pole of one magnet will attract the south pole of another one but it will repel another north pole. That's what we mean when we say that 'unlike poles attract, like poles repel.'"

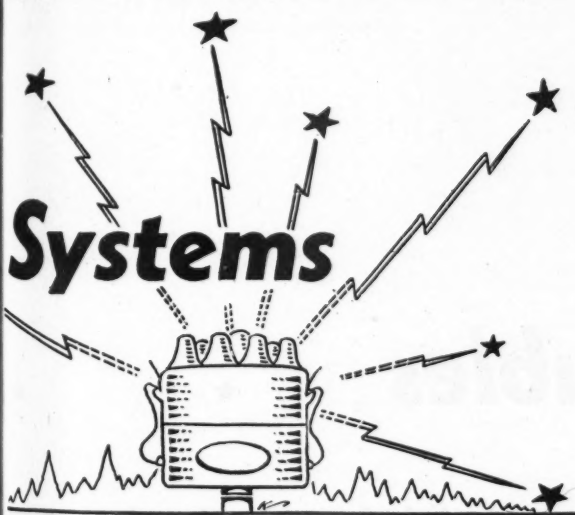
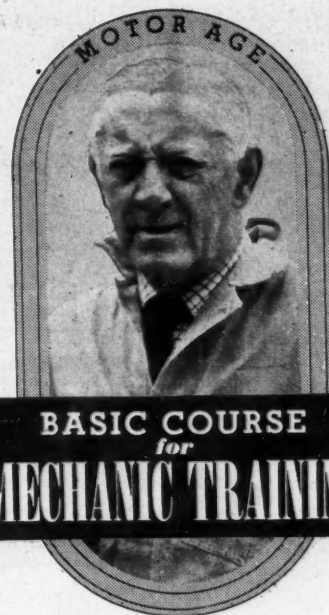
"But," objected Tommy, "an ignition coil isn't a magnet."

"Not so fast," said Pop, "not so fast. You ain't givin' me a chance to explain about magnetism. I was just startin' to talk about 'lines of force.' These keep flowin' through the magnet all the time from the south pole to the north pole. Then they flow out of the north pole and through the air back to the south pole."

"You mean there's magnetism in the air around a magnet all the



Internal circuits of a modern ignition coil, showing primary wound outside the secondary.



Questions asked by his young helper about magnetism and its part in the gasoline engine are answered by Pop O'Neill in the 31st yarn of a series

By J. EDWARD FORD

time?" His eyes widened in surprise.

"There sure is on a permanent magnet, and on an electro magnet it's there as long as there is current flowing in the windings. It's called the magnetic field. And that's what makes most electrical gadgets work except, of course, in heatin' and lightin'. Take a generator." With a pencil, he started to make a sketch on the back of a letter. "When you get down to it, all a generator consists of is two magnets like this." He drew the ends of two steel bars, with a space between them. "Then there is a loop of wire between them." He drew a rectangle of wire. "Now let's call this magnet the north pole and this other one the

south pole. The lines of force flow from the north pole to the south pole like they always do. Now suppose we turn this loop of wire between the magnets—or cut the lines of magnetic force, as they say. Just doin' that sets up, or induces, an electric current in the loop, and we've got electricity. We simply connect wires to the loop and lead it to where we want it to do work."

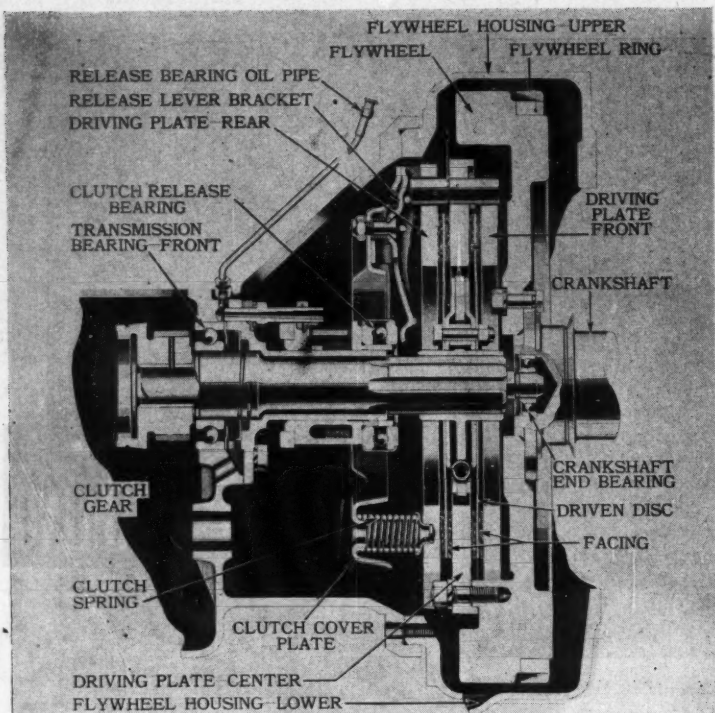
Tommy scratched his head. "I see that," he said, "but there's nothing in an ignition coil to turn around."

"You're a little like a woman, kid," said Pop. "When you get your mind set on somethin' there ain't no side trackin' you. I'm comin' to coils in a minute, but we'd bet-

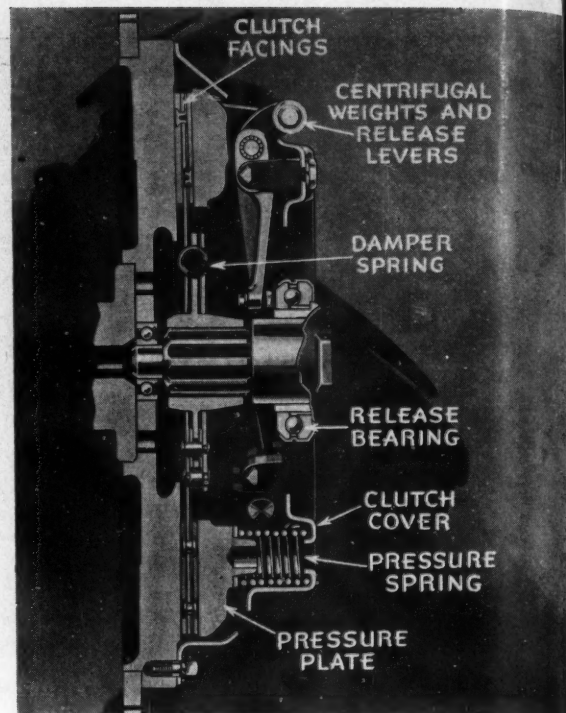
ter get a better notion of a generator first. Larry might want you to help him with one tomorrow mornin'. You wouldn't want him to ride you again, would you?"

"I'll say I wouldn't."

"Okay, then we'll find out about generators, or dynamos, as they used to be called. The way I've got the magnets and the loop drawn here—" he tapped the sketch on the back of the letter—"there's nothin' in the loop but air and the lines of magnetic force don't travel through the air as good as they do through a piece of soft iron. So we'll draw an iron core in the loop, the way it is in real generators, so the lines of force flowin' across the loop won't meet so much resistance. (Continued on page 56)



Typical double-plate clutch, as used on many trucks and buses.



Single-plate clutch, with centrifugal weights on release levers.

# Shooting Clutch Troubles

## GRABBING CLUTCH

May Be Caused By

- Worn facing.
- Improper adjustment.
- Damaged plates.
- Oil or grease in clutch.
- Sticking clutch pedal.
- Improper oil in clutch (wet type).
- Clutch hub sticking on clutch shaft.
- Sticking pressure levers.
- Lack of proper alignment between engine, clutch and transmission.

## BRAKING CLUTCH

(Stops Spinning Too Quickly)

May Be Caused By

- Dry or damaged release bearing.
- Bent clutch shaft.
- Damaged transmission main shaft front bearing.

With this handy list of symptoms and causes, you will be able to diagnose faults without losing valuable time

Improper lubricant in transmission.

Lack of proper alignment between engine, clutch and transmission.

## SQUEAK IN CLUTCH

May Be Caused By

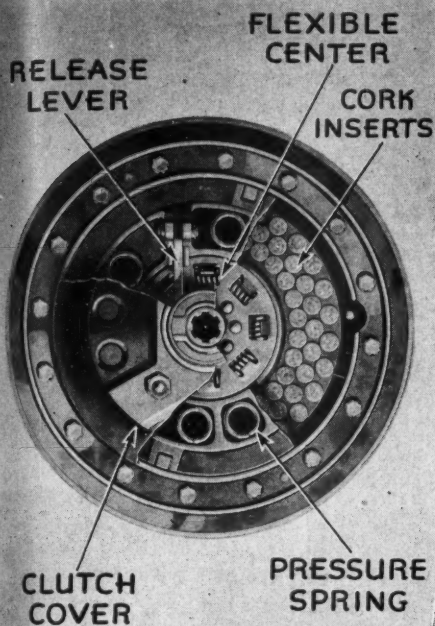
- Dry or damaged release bearing.
- Dry or damaged pilot bearing.
- Dry or damaged transmission main shaft front bearing.
- Dry sliding sleeve.
- Lack of proper alignment between engine, clutch and transmission.

tween engine, clutch and transmission.

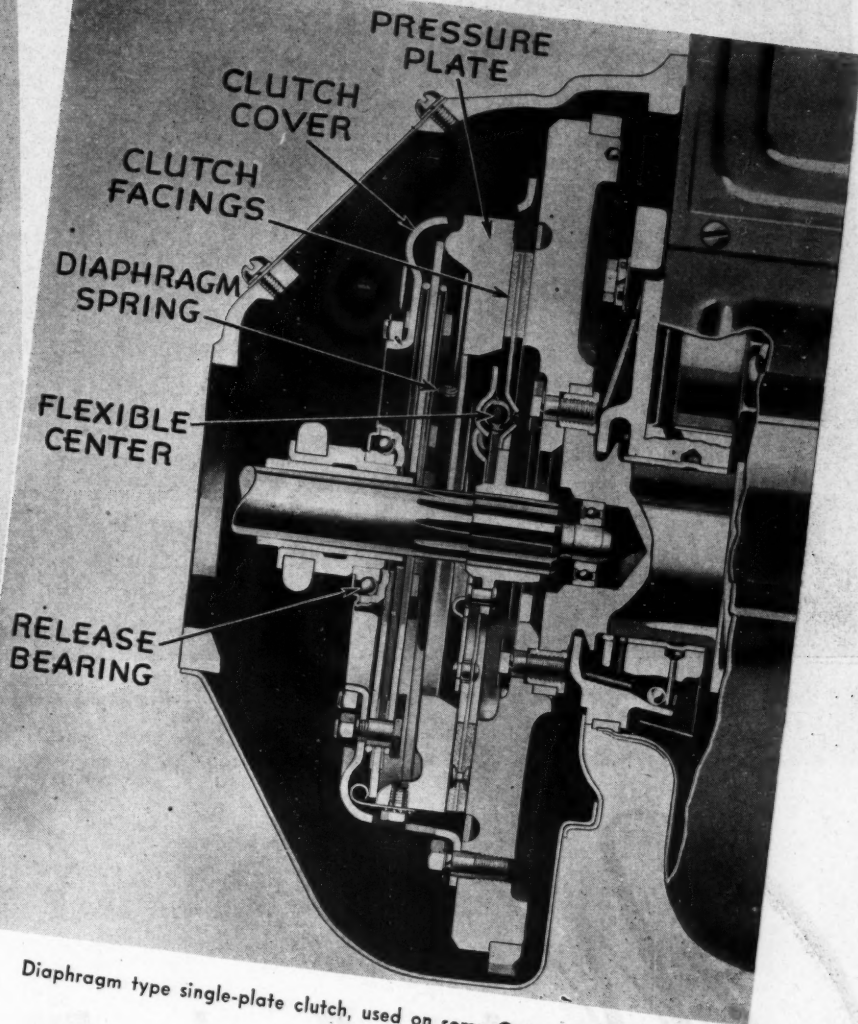
## SLIPPING CLUTCH

May Be Caused By

- Worn facings.
- Improper adjustment.
- Broken or weak pressure springs.
- Damaged or warped plates.
- Oil or grease in clutch.
- Dust or foreign matter in clutch.
- Sticking clutch pedal.
- Sticking pressure levers.



Oil-type single-plate clutch, with cork inserts, used on Hudson and Terraplane.



Diaphragm type single-plate clutch, used on some General Motors cars.

Improper oil in clutch (wet type).

Lack of proper alignment between engine, clutch and transmission.

NOTE—The engine crankshaft, clutch shaft, and transmission main shaft must be in proper alignment with each other. Several causes of misalignment are as follows:

A—Flywheel housing halves not properly matched or lined up.

B—Bore of flywheel housing not concentric.

C—Face of flywheel housing not parallel with flywheel.

D—Pilot on flange of transmission housing not concentric.

E—Variation (run-out) in face of flange on transmission housing.

F—Improper fit of pilot bearing in flywheel recess and on clutch shaft.

G—Flywheel wobbles or runs eccentric.

## DRAGGING CLUTCH

### May Be Caused By

Improper adjustment.

Damaged plates.

Bent clutch shaft.

Sticking pilot bearing.

Sticking sliding sleeve.

Warped cover.

Oil or grease in clutch.

Improper oil in wet clutch.

Engine idling too fast.

Lack of proper alignment between engine, clutch and transmission.

## RATTLE IN CLUTCH

### May Be Caused By

Worn splines on shaft or drum, or in hub of plate.

Worn retaining bolts.

Dry or damaged release bearing.  
Damaged transmission main shaft front bearing.

Wear in release mechanism.

Damaged clutch plate.

Bent clutch shaft.

## CHATTERING CLUTCH

### May Be Caused By

Glazed facings.

Improper adjustment.

Damaged plates.

Bent clutch shaft.

Sticking pressure levers.

Oil or grease in clutch.

Improper oil in clutch (wet type).

Lack of proper alignment between engine, clutch and transmission.

Defective motor mountings.

Loose radius rods.

(Continued on page 50)



A customer about to enter the "20 Minute Wagon," driven by an attractive young woman.



J. E. Coberly, a believer in service.

# Wartime Service Pioneer

**Even without new cars to sell, a Western dealer  
finds ways to gain owner interest and good will**

**By ROSE LU DeWINDT**

**P**IONEERS and the West are as inseparable as shoes and socks, as doughnuts and coffee. Today, with the West all settled, with drive-ins and super highways where the Old Indian trails used to be, the pioneer has lived on. The difference is that the pioneer of today explores trade trends instead of trade routes, and prospects for gold in pockets instead of in the hills.

The pioneer spirit—the willing-

ness to try something new—runs strong in J. E. Coberly, Lincoln-Zephyr distributor for the Los Angeles, Cal., area. Engaged in the business of selling automobiles since shortly after the last war, he has both inaugurated and pioneered many of the practices now considered commonplace.

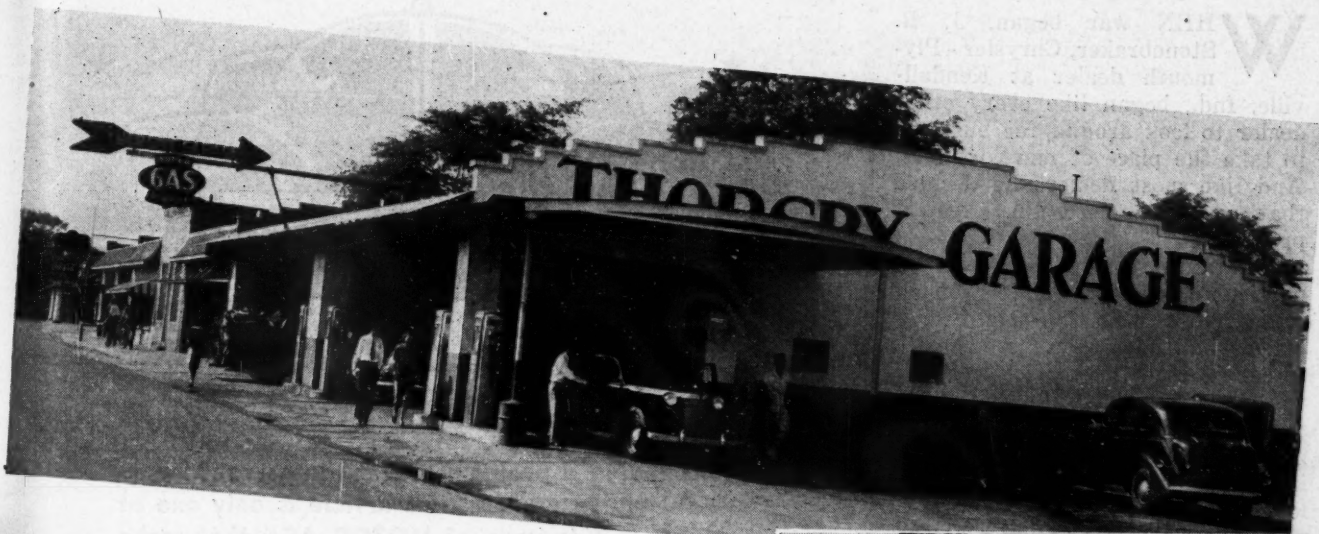
When back in 1919, Mr. Coberly saw that many of the potential car buyers lacked cash for the rather

large outlay required, he started a plan of automobile financing which was one of the country's first. Many of the ideas employed in his shop today will probably be equally well-known a few years hence. They are certainly worth looking into.

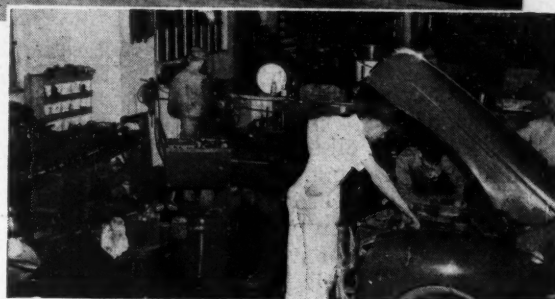
In 1939, Coberly moved from the long-established site in mid-Los Angeles to a new modern building. This new location was "halfway out"—not in the business or shopping district, where it would be convenient for owners driving into town, nor in the residential district.

To make the salesroom and shop as readily accessible as before, Coberly launched the "20 Minute Wagon," a new station wagon which makes a twenty minutes circuit of the business district every half hour. It is driven by a uniformed chauffeur, who happens during the

(Continued on page 54)



View of the Thorsby Garage, Thorsby, Ala., as it appears to an approaching truck driver. Right, S. T. Bentley, the proprietor, in white coveralls, supervises a rush service job in the shop.



# Super Service for Trucks

**Demand for its prompt night-or-day emergency repairs keep this unusual Southern shop busy**

**By GEORGE H. WATSON**

**T**HERE are no keys or doors to Thorsby Garage, Thorsby, Ala. None is needed because the shop's business is to give service 24 hours a day and the weather is not severe enough in that part of the South to require doors. The entire front and part of one end are open, making it easy for trucks and cars to drive in.

The Thorsby Garage is an institution in its community, as it has been rendering service from the same stand for almost 25 years. But it is, perhaps, best known for its highway service. It is located on the north-and-south Beeline Highway, midway between Birmingham and Montgomery. A big arrow, mounted over the high-

way, calls the passing motorist's attention to the garage.

The concern renders wrecker service on a good stretch of this highway and has brought first aid to many a stranded motorist. There is not so much passenger travel now as formerly, on account of gas and tire rationing, but more truck transportation, so the shop has turned its attention to commercial vehicles. In fact, it is a favorite stop for truck drivers who buy their gas there. As a result, the concern's gas volume has held up well, being in the 12,000 to 15,000 gal. bracket every month. In addition, these truckers, when they stop at the shop to eat their lunches and use the rest rooms, have the

shop take care of their vehicles' minor mechanical troubles. If a heavy tractor-trailer outfit gets stalled on the road, it is Thorsby Garage which gets them going again. Its "sudden service" is famous among truckers in that part of the South.

In addition to its road service, the concern accepts the responsibility of service to the community in which it is located. This responsibility is heavier now than ever before on account of the closing of some service stations in the area by conditions brought about by the war.

The Thorsby Garage, or at least S. T. Bentley who operates it, likes to think the shop is helping the war effort.

"I read ads that say 5,000 automobiles are going off the road daily," said Bentley. "In our community a good many vehicles are giving up the ghost. However, we are saving a share of them. We keep a good stock of new parts on hand, so as to be in position to handle emergency re-

*(Continued on page 76)*

**W**HEN war began, J. R. Stonebraker, Chrysler - Plymouth dealer at Kendallville, Ind., began like every other dealer to look around for business to take the place of new-car sales. And like most dealers he decided that service offered the greatest promise.

Obtaining service work was no particular problem, but it soon became evident that the shop Stonebraker had once thought adequate to care for all the service work he was likely to have fell short of meeting wartime needs. So he moved out of his old location and into a streamlined shop in a better location—a place on U. S. Highway 6 at the edge of town. Though he still holds a factory franchise and deals in used cars, his business today consists almost entirely of service.

Gasoline and oil sales, though reduced by rationing, are still high for Stonebraker, because he never emphasized them in peacetime. Tire and battery sales have likewise increased, and he is selling parts



**Discussing a problem of vital importance particularly to dealers, this article is only one of many in this issue of MOTOR AGE that make profitable reading for the car dealer and the men in his shop. All the articles in this and every other issue of MOTOR AGE offer helpful information on management, service, official regulations, and current developments pertaining to the automotive retail field.**



Pre-war plant, which featured sales at the expense of service.



## Dealer Speeds Service

and supplies he never bothered to handle at the old location.

"The big thing," Stonebraker says "is that we can retain at least a substantial part of our service organization, keep our customers' cars running, and thus hold their good-will. We can earn a fair profit by eliminating needless expenses, and still get ready for the big post-war demand for service and new cars.

"The old building had a 60 ft. frontage, and was 130 ft. long. With the loss of nearly all new-car sales we couldn't have operated

profitably in the old place. Then the shop was hard to heat. In zero weather, it would be uncomfortable all day. The cost of fuel was prohibitive for a service shop.

"As maintenance business increased, it taxed our shop facilities beyond capacity," says Stonebraker. "The main reason for this was that there were only two doors to move cars in or out. This slowed up work with mechanics moving cars or waiting for them to be moved. We had no suitable parking space outside.

"It was plain that repair and ser-

vice jobs had to be speeded up, and the present location, with its more modern facilities, was the answer. We can drive cars directly into the service department through a choice of four conveniently spaced doors, and quickly place them either on the hydraulic hoists for lube jobs, or in a bay for major overhauling work. The space accommodates five cars with liberal room—six can be parked inside. Completed jobs can be backed outside and parked in front of building. Thus the shop saves most of the time that used to be wasted. Our men can now



The new Stonebraker sales and service layout, showing easily accessible service bays. Above, J. F. Stonebraker tunes up a sailor's car.

## ce with Streamlined Shop

devote their undivided effort to service and repair work.

"An idea of the time saved can be gained from the fact that only two full-time mechanics remain, yet they turn out about as much work as the old shop used to do with more men.

Lubrication is the Keystone in the preventive maintenance program which Stonebraker has set up for customers. The lube job alone starts at \$1. Careful check-ups are made while customers' cars are being lubricated and build up to

(Continued on page 50)

**In a larger, more modern shop where cars can be moved about with greater ease, a smaller force of mechanics can produce a larger volume of work**

**By A. E. HOLDEN**

# DID YOU Know It?

WHO?

WHAT?

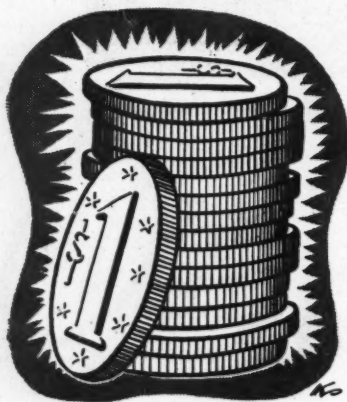
WHEN?

WHERE?

WHY?

... and HOW?

## Caught Short



Every self-made man has probably had the story told about him. Henry Ford, being wealthier than most men, could not possibly escape, so here it is:

Ford was in New York City early in the century, trying to whip up interest in the cars he was building. After making the calls he had planned, he was ready to re-

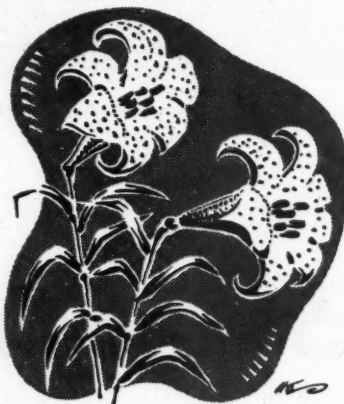
turn to Detroit when he discovered that he lacked \$15 of having enough money for the trip.

Even then, Ford was better-known in New York than almost any other car maker, but time was getting short and he could not travel far to solicit the aid of old friends. He happened to be on Broadway, close to the sales room of Arthur Lee Newton, who was handling a car known as the Northern Automobile. So he walked in and told Newton, the present head of Glidden Buick in New York, that he needed a few dollars to get back to Detroit.

Newton offered him any amount he needed, but Ford insisted that \$15 was enough and that was the sum Newton lent him. The first mail out of Detroit after Ford's return carried a check in repayment.

Ford probably would have to cudgel his memory to recall the incident. It is one of Newton's most pleasant recollections.

## Oiling the Lily



Slogans and catchwords in advertising are so familiar to everybody these days that no one stops to wonder how long they have been with us and what odd forms they took in the early days.

One of the strangest, as we look back fondly to the old days, was inscribed on a sign supplied to garages by an oil

company along about 1910. This was the era in which "autoists," instead of taking a ride, "went for a spin," so the oil company being up to the minute in its slang, hit on this parody of a Scriptural quotation referring to the lilies of the field:

"Oil not, neither will you spin." —Ernie's Garage.

## Who Is This Man?

He helped build Pope-Toledo, Chalmers, Simplex and Thomas-Detroit cars.

He was noted as a race driver in the days of the Gordon Bennett, Vanderbilt, and Fairmount Park races.

During World War I he was chief inspector of Liberty motors.

## LET US SEND YOU \$10.00

Motor Age will pay \$10.00 each for acceptable short items or articles which are published in this department. They should be brief, preferably with a real humorous touch and, above all, should be of wide interest to those in the trade. They can be anecdotes regarding well-known men in the automotive industry, interesting bits about little known facts relating to the industry or its products, stories about unusual stunts or experiences with automobiles from the earliest day to the present. The general character of the material desired may be judged best by referring to the items on these pages and in this department in previous issues. The facts should be simply but plainly stated without any attempt, necessarily, to put them in publishable form. The Editors will see to that.

Send your contribution—every reader of Motor Age is invited to do so—to "Did You Know It", Motor Age, Chestnut and 56th Sts., Philadelphia 39, Pa.

Later he became service manager of Stutz and later a vice president.

Today he heads one of the best-known truck companies.

These hints should enable you to identify him. If not, turn to Page 84 for his name.

## Eastern Detroit



"The town of Hartford, Conn., is the greatest center of activity in the automobile industry today."

If this quotation seems a little screwball, the fault is not with the statement but with the habit time has of passing. The quotation was made by an English technical writer in 1899, according to Henry Cave, the man

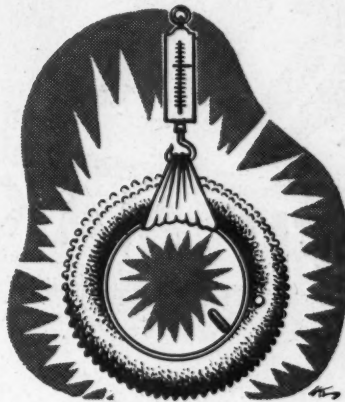
who helped George B. Selden put his first car in running order. And strange as it may seem today, the English observer was right.

It was in Hartford that the Pope Manufacturing Co. was established in 1895 and produced its first electric car in 1897. Later, when the Pope company acquired control of the Selden patents, the automobile department operated as the Electric Vehicle Co. of Hartford.

Products of the early Hartford factories were num-

erous and varied. They included "pleasure cars," both gasoline and electric, electric trucks and electric hansom cabs.

## Air Weighs



Since war began, every American has learned the value of maintaining automobile tires at correct pressure. Thirty years ago, the knowledge was not so general, as I discovered one day in 1913.

With my stepfather, I was driving out of Scranton, Pa., over what was then known as the Nicholson cut-off and is now

named the Susquehanna trail. The tires on the car carried a normal pressure of 70 lb. As we neared the farm that was our destination, one of them went flat. A farmer came up to look but not to help.

We repaired the tire and remounted it and got out the two-cylinder pump and set to work, building up that 70-lb. pressure again. After we had pumped what we thought was long enough, we disconnected the pump and applied a pressure gage.

My stepfather was disappointed. "Shucks," he said, "only 40 lb. Thirty still to go."

The onlooking farmer was perplexed. "I didn't think you could get enough air in that there tire to weigh 40 lb.," he said.

—B. H. Eaton.

## Gas by Another Name



GIs returning from England are just as likely to refer to gasoline as "petrol" as they are to call it "gas."

Like other Americans that have visited England, they see nothing particularly wrong with the term, since at first glance it seems like an abbreviation of the word "petroleum" and thus more descriptive,

perhaps, than the American "gasoline."

"Petrol" is derived from "petroleum," but not in the way most persons suppose. The term first used to describe automobile fuel in England was "motor spirit." Then another English refiner, about to market a new double-distilled fuel, began to look around for a catchy trade name. He happened on "petrol" and his product was merchandised under that designation for years. In time, the shorter word ousted "motor spirit."

# NEW PROFIT MAKERS

## PARTS TOOLS EQUIPMENT ACCESSORIES

### Power Brush

As used in automotive parts reclamation, power brushing does in 2 or 3 min. the work of removing rust, grease, scale and dirt that would take 15 to 20 min. by hand.

The parts to be cleaned are simply gone over with a power-driven brush, spinning at 3600 r.p.m. This contrasts with the slow hand method of dousing parts with gasoline to loosen the grease and dirt, scraping and filing.

In addition to doing the job 8 to 10 times faster, power brushing affords



the further benefit of removing burrs, nicks, etc., left on the parts during handling or dismantling, even during original manufacture. In this respect, it can be said that certain parts are even better after power brushing than when new.

The equipment used for the work consists of either a portable hand tool, electric or compressed air operated, or standard polishing jack in which is mounted a wire brushing wheel of 8 in. diameter and  $\frac{3}{8}$ -in. thickness, having wire of .0118 size. Held so that the wire ends contact the surface to be cleaned, the spinning wheel makes short work of grease, dirt, scale and rust removal, according to the suppliers of the brush, The Osborn Manufacturing Co., Cleveland, Ohio.

### Crack Repair Kit

A useful repair kit for badly cracked motors and various mechanical repairs is being offered by the Miller Mfg. Co., Camden, N. J., manufacturers of the already well-known Wonder Seal. This kit contains 2 lb. of metal rods in assorted sizes, 2 pt. of Wonder Seal and an O.D.T. Instruction Manual. It sells to the trade for \$10 and includes sufficient rods to do from 2 to 10 repair jobs. The rods alone are available in 2 lb. packages

at \$8 per package. Sizes offered are  $\frac{1}{8}$  in.,  $\frac{3}{16}$  in.,  $\frac{1}{4}$  in. and  $\frac{3}{8}$ -in. rods. For more information, or to order, address communications to Miller Manufacturing Co., Camden, N. J.

### Clutch Plate

A new type, heavy-duty clutch plate which, it is claimed, permits two to three times more service mileage than conventional plates for trucks, buses and other heavy vehicles, has been announced by The Monmouth Products, Co., 1931 E. 61st St., Cleveland, Ohio.

Known as the Monmouth "Metallix" clutch plate, this flexible center-drive plate absorbs sudden torque and dampens vibration due to uneven power impulses. Patented construction prevents breakage of springs around drive hub and prevents them from becoming permanently set.

Each face plate has six spring-steel segments to cushion the clutch action, assure smooth, positive operation and permit safe pick up of heavy loads.

An eight-page folder listing the various makes and models of cars, with numbers and dimensions of "Metallix" clutch plates for each, is available by requesting bulletin 078-080 direct from the company.

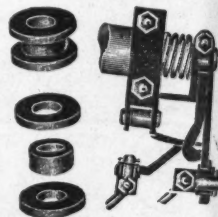


### Fiber Bushings

Champ-Items, Inc., St. Louis, manufacturers of the popular line of Champ-Items reconditioning short cuts for automotive servicing, has a line of Fiber Bushings, designated under item Nos. 432 to 436, inclusive.

These Fiber Insulating Bushings, states the manufacturer, replace the standard rubber bushings and make a permanent repair. They can be installed without removing rods, are not affected by oil or water, and keep a positive adjustment at all times. Manufacturer will send our readers sample on request.

Gear Shift Lever Bushings No. 432 for Plymouth 1939-41 and Dodge 1939-40; No. 433 for Pontiac 1939-42 and Buick 1940. No. 434 for Buick 1941-42. Gear Selector Bushings No. 435 for Buick 1940-42; No. 436 for Pontiac 1939-42. List 20 cents each.





"If you guys don't stop traipsing in here every 15 minutes to see what day it is, I'm gonna burn that calendar up!"

# Laughs

## OF THE MONTH



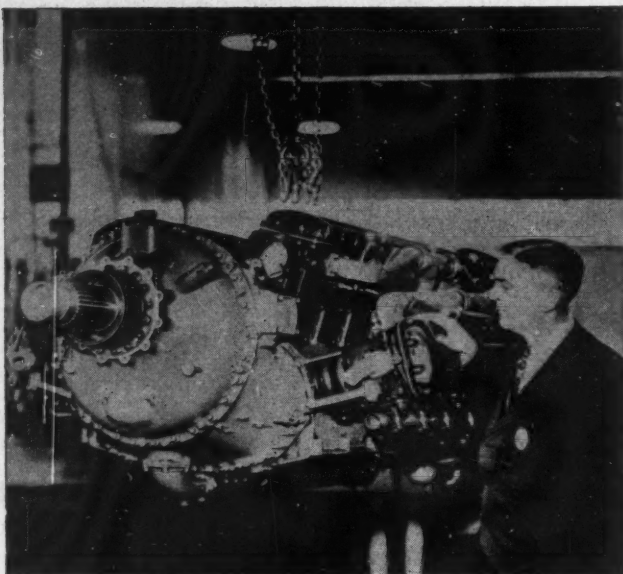
"Believe me, you certainly can notice the shortage of skilled workmen!"



"Gosh, Boss, if she's been there for two hours and hasn't got one yet, what chance have we?"



"What can I possibly do for you?"



**AIR GIANT.** The mighty new 24-cylinder Allison liquid-cooled airplane engine which is said to develop 3,000 hp., by long odds the most powerful plane engine in service.



**LITTLE DETROIT.** That's what the GI mechanics call the assembly lines in New Guinea where 2½-ton Army trucks, as shown here, are put together after trip from U. S.

**LEAPING JEEP.** This strange-looking vehicle was built on Guadalcanal by Marine Sergeant Norman W. Stimson from parts of junk Jap truck, tractor, and staff sedan.

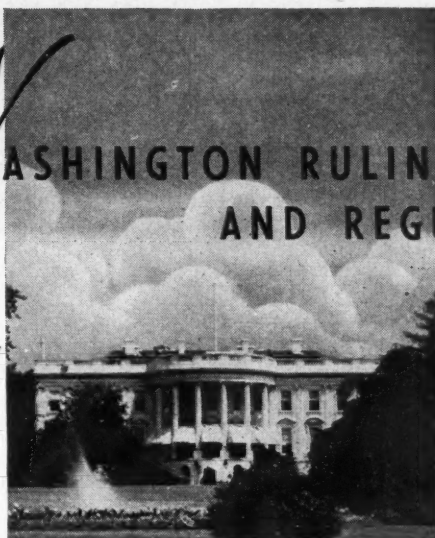


## Used Passenger Cars Put Under Price Ceilings

**A**FTER threatening to take such action from time to time over the last year, the OPA has placed used passenger automobiles under price ceilings, effective July 10. Prices of all makes and models of cars manufactured from 1937 through 1942 are fixed at the January, 1944, level. Cars manufactured previous to 1937 cannot be sold at prices higher than those set for the nearest comparable 1937 models. The cars considered as comparable models are listed in an appendix to the regulation.

For the purpose of establishing prices, the OPA divided the country into three regions, all states east of the Mississippi being considered in Region A. Arizona, California,

# WASHINGTON RULINGS AND REGULATIONS



Nevada, Oregon, and Washington were placed in Region C, and the remaining states in Region B. Prices are lowest in Region A, highest in Region C.

Both "as is" and "warranty" prices are established. The latter are 25 per cent, or \$100, higher than the "as is" prices. Only dealers, who are defined in the regulation as those maintaining repair facilities, may add the warranty mark-up. Dealers in selling warranted cars must guarantee in writing that the car is in good operation condition and that it will remain in such condition under normal use and service for 30 days of 1,000 miles, whichever occurs first. Under the warranty, they must agree to make reasonably prompt repairs or replacements necessary to keep the car in good operating condition for the war-

ranty period at a cost to the purchaser of not more than 50 per cent of their normal charge, which must be within OPA ceilings for such service.

All prices will drop at the rate of four per cent every six months.

Certain accessories and built-in equipment may be included in the ceiling price. For example, a heater may be priced at a flat \$10, regardless of year or model, and a radio may be priced at \$30. Special drives and automatic, semi-automatic, and overdrive transmissions are priced in the regulation according to the model and year of the car of which they are a part. Federal, state, county, and municipal taxes on the sale may be included in the maximum price.

A transfer certificate must be filed by the buyer of a used car with his local War Price and Rationing Board.

This must be filled out by both buyer and seller. It will contain the applicable maximum price, the actual selling price and other details of the sale. The certificate must be filed even when the seller is a private individual.

An idea of the range of the new price ceilings may be gained from the figures on a Ford V-8 de luxe four-door sedan. A 1942 model is priced "as is" at \$990 in Area A, \$1,025 in Area B, and \$1,065 in Area C. The "warranty" price in the respective area are \$1,238, \$1,281, and \$1,331.

## Bearing Supply Easier

MANUFACTURERS of anti-friction bearings have been able to cut their backlog of unfilled orders to an estimated seven-month production, (Continued on page 40)

**CYCLES IN WAR PAINT.** A crowd of eager buyers storms the sales room of a Los Angeles car dealer who offers 50 motor cycles recently released by Army.



**SHIP HIGHWAY.** Huge section of a prefabricated ship travels by highway from Baldwin Park to Long Beach, Cal., where it will join others to make complete ship.

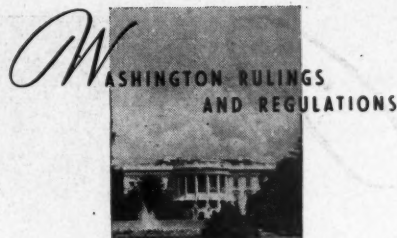
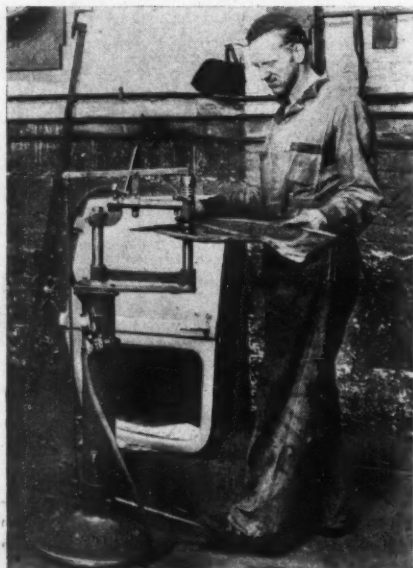


**KEY ROAD.** New highway from the mainland of Florida to Key West closely parallels the old. Here is a stretch of the two roads on Key Largo, running side by side.



**LEGAL HOLD-UP.** Military and civilian authorities at Los Angeles quiz 11,801 drivers in move to trap violators of state motor laws as well as military regulations.

**METAL IRONER.** This planishing machine, driven by compressed air, smooths out bends, dents, and wrinkles in metal sheers. It delivers 3100 powerful blows per minute.



(Continued from page 39)  
the WPB has announced. The decrease of a full month in the time required to fill all back orders has not been due to increase production but to a reduction in new orders, it is explained. The latest period for which figures are available was April. May production was expected to increase slightly.

### Anti-Freeze Prices Set on Jobber-to-Jobber Sale

**T**WO changes have been made in Maximum Price Regulation 170, covering the sale of anti-freeze, to facilitate the distribution of the product.

First ceiling prices have been established for sales by one jobber to another. Previously such sales were exempt from regulation. The prices are the same as those established for sales to retailers.

The second change reduces from five to three cents a gallon the freight absorption required of jobbers of Types N and S on individual shipments to retailers. Type N consists of anti-freezes with a natural volatile alcohol base, Type S those having a synthetic volatile alcohol base.

### Condition to Determine Class of Surplus Used Cars

**A**CCORDING to a bulletin of the National Automobile Dealers Association, field forces of Treasury Procurement have been instructed to classify surplus cars and trucks into two general categories, one to be composed of strictly junk vehicles; the other of vehicles that either are serviceable or can be made so.

Junk cars and trucks will be sold on the basis of sealed bids only. Bids will be examined at a public "opening."

Serviceable vehicles are divided into five classes: A. New vehicles; B. Practically new; C. Good; D. Fair; E. Poor.

No vehicles in the first class are available at present. The others will be sold on bids or negotiated sales. Treasury Procurement is now accepting bids. When more bids are received than there are vehicles to be sold, only those at ceiling prices will

be considered. Since this is not always the case, dealers when bidding should bid "full value" so that they will obtain the desired vehicle if it is shown that the dealer's bid is high.

Certain government agencies are permitted to give a letter of recommendation to a farmer or industrialist who needs a truck and the prospective buyer may then in company with the dealer of his selection inspect the vehicle he wishes to buy.

### Ceiling Prices on Surplus New Cars Are Set by OPA

**D**EALERS who sell new passenger automobiles obtained from Treasury Procurement out of surplus government stocks will be able to add 27 per cent of the list price of the car as stated in Appendix A to new-car price regulations, provided the car is in a condition similar to that of an automobile upon which the maintenance operations have been preformed from Oct. 31, 1942, to the date of sale. If the car is not in such condition, then the dealer may increase the list price by only 10 per cent. If he bought from Treasury Procurement at the maximum price, he would thus recover only his acquisition cost. The new ceilings became effective June 24.

Under the new regulations, Treasury Procurement is permitted to charge the list price, plus transportation costs and 10 per cent of the list. The allowance is made to meet the average amount of increment paid on the vehicles by the government. Previously the allowance was limited to the amount of increment actually paid.

In selling such cars, the dealer must certify on a prescribed form that the vehicles were purchased from the Treasury Procurement Division and, if he is selling at the 27 per cent mark-up, that it has been put into condition that permits the maximum price.

### Advisory Groups Named

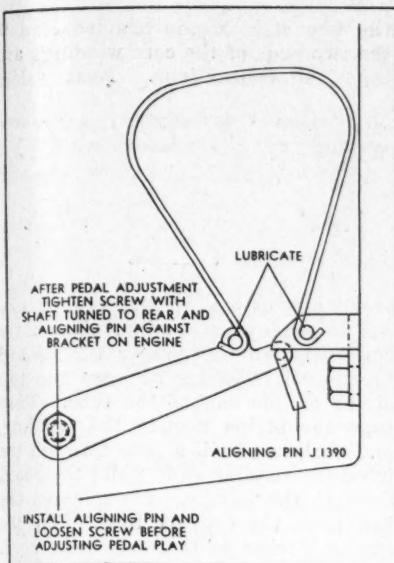
**F**ORMATION of 66 Gasoline Industry Advisory Committees has been announced by the OPA. Appointed by district mileage-rationing officers, the committee include all phases of the gasoline industry.

(Continued on page 120)

# SERVICE HINTS



## FROM THE FACTORIES



### Clutch Adjustment

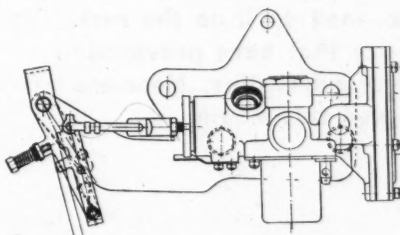
Free play in Nash 4260-80 clutch pedal should be  $\frac{1}{2}$  in. To adjust, a special aligning pin should be used as shown in illustration. Loosen helper-spring screw at right end of clutch-release shaft. Tighten nut at rear end of pedal to lever link to a point where the pedal has  $\frac{1}{2}$  in. free play. Remove all play from the clutch throwout shaft by turning it to the rear. Then tighten helper-spring lever screw with the aligning pin against the projection of the pivot bracket at the rear end of the engine. If the lever is adjusted too low, the clutch pedal will not return and cause the clutch to slip. If lever is too high, the pedal will be hard to push.

### Clutch Control Valve

On a 1942 Packard car, equipped with an electromatic clutch, the lock-out switch on the instrument panel is pushed in after the motor is started and then it is possible to shift gears without depressing the clutch pedal. A power cylinder, mounted on the side of the motor and controlled by the inlet manifold vacuum, is connected to the standard clutch linkage in such a manner that the clutch can be operated manually or by the electromatic clutch. When the vacuum of the inlet manifold is admitted to the cylinder, it draws the piston inward and disengages the clutch and, when the vacuum is shut off, air is admitted into the cylinder and pushes the piston outward, engaging the clutch.

A clutch control valve regulates the rate of air bleed into the cylinder and is located in the vacuum line between the inlet manifold and the power cylinder. This is a compound valve and regulates the rate of air bleed to provide the proper clutch engagement as well as synchronizing the clutch with the proper engine speed. One element, the spool, is connected by linkage to the accelerator pedal, the other ele-

ment, the sleeve, is actuated by a spring-loaded vacuum diaphragm which is subject to vacuum equal to that in the power cylinder. As the accelerator pedal is depressed, the two elements in the valve move in relation to each other and shut off the vacuum supply and bleed air into the power plant at such a rate to automatically provide the proper rate of clutch engagement for all normal driving.



### Throttle Adjustment

On 1942 Studebakers, warm up engine and set idle speed equivalent to 8 mph. in high gear or about 500 to 525 rpm. The throttle screw must be at the warm idle position before this adjustment can be made.

Turn off the engine and, with the throttle in the closed position, adjust the rod (which extends from the accelerator cross shaft to the bell crank on the manifold) to bring the lever on the end of the accelerator cross shaft parallel with the dash. This adjustment can be varied to some extent to suit individual requirements.

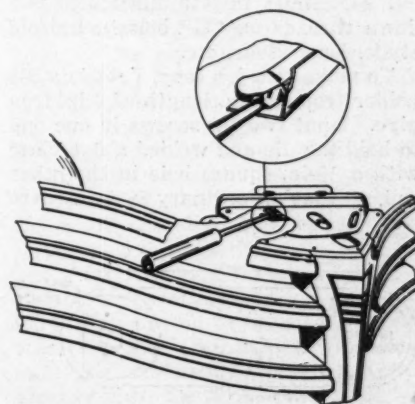
If when the accelerator is depressed, the speed of the engine increases more than is desired during clutch engagement, shorten the length of the rod. If the reverse occurs, increase the length of the rod.

### Cowl Ventilator Leaks

The cowl ventilator cover should fit tight at the rubber seal on the top sides to prevent leaks on the 1942 Plymouth cars. With the ventilator open, loosen the screws on each side of the lid and align it with the opening in the cowl and tighten the screws. To adjust the tension of the lid on the rubber seal, shorten or lengthen the connecting link between the handle and the lid by means of the slotted holes in the connecting link back of the instrument panel. The drain tube from the cowl-drain trough through the dash should be checked to determine if the water flows freely.

### Hood Release

If necessary to open the hood on a 1941 Pontiac without opening door, insert an 8-in. screw driver in the opening between the first and second radiator grille bars on the right side of the car. Place the point of the screw driver between the hood catch lever and front part of the bracket and use as a pry to release the catch.



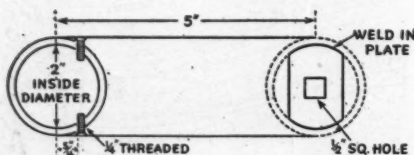
# \$5 SHOP KINKS

Here's your chance to pick up a little cigaret money. We'll pay five bucks (\$5.00) for every Shop Kink accepted and printed. So send 'em in to us—some short cut you use in doing a job easier and faster than the other fellow—some special tool you made when you couldn't buy one to do the job—and we'll do the rest. Incidentally we won't accept any that have previously appeared in any other automotive publication. Here are some that were accepted this month.

## Die Holder

I sometimes find it difficult to run down threads on "U" bolts, manifold studs, head studs, etc.

To make this job easy, I made a die holder from a 5-in. length of 2-in. iron pipe. I put two set screws in one end to hold the die and welded a flat plate with a ½-in. square hole in the other end, so that an ordinary ½-in. square



socket handle can be used to drive the tool.—A. G. Schmidt, Box 351, Grayville, Ill.

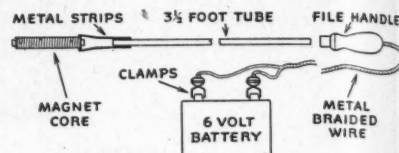
## Axle Stub Puller

The following is a description of a very handy broken-axle stub puller which I made from old material found around the shop:

The tool consists of the magnet core, complete with windings from an old Model T Ford coil. A 3½-ft. piece of copper tubing, an old file handle, a piece of braided two-lead copper wire and two spring-type battery clamps.

Remove the magnet core, complete with windings, from the coil, connect

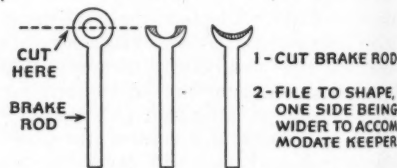
the two ends of the braided cord to the two ends of the core windings and tape the connections. Next solder



two strips of 3 x ¼ in. brass or copper to the copper tubing. Insert the cord through the copper tubing and fit the coil winding between the two strips on the end of the tube. Then tape the strips around the winding, and shellac. Drill a hole through the wooden handle and pull the cord through the handle. Then fasten the handle to the copper tube. Put the spring clamps on the end of the cord. When the tool is connected to a 6-volt battery, the pull is sufficient to remove most any axle stub.—Weyman H. Whitehead, 5th and Asbury Ave., National Park, N. J.

## Installing Keepers

When installing the half-moon type valve keepers, it is very difficult to hold the keeper in your fingers and also be able to see what you are doing at the same time.

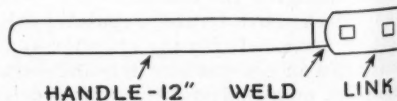


To overcome this difficulty, I have made a tool from an old brake rod as shown in the illustration, which enables me to do this job in half the time formerly required.

Cut the eye on the brake rod in half and file to the shape of the keeper, using a half-round file. One application of grease to the tool is generally good for four to five keepers.—J. G. Hehn, c/o Curtis Vaught, 5th and Bush Sts., Santa Ana, Calif.

## Aligning Shackle Bolts

I have made a very handy tool to line up the spring-shackle bolts on Ford V-8 cars. I use an old V-8 shackle link and weld a handle on one end about 12 in. long. By slipping

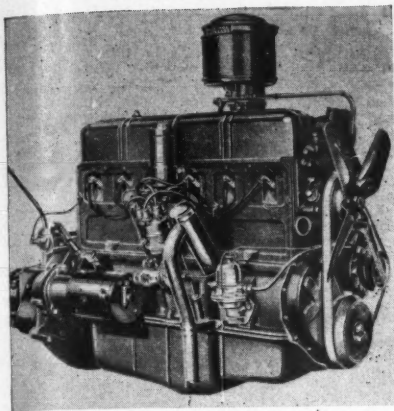


the square in the link over the square on the shackle bolt, I can turn the bolt to the position necessary to make the two bolts line up.—Spencer Bowman, Mid-Way Garage, East Bend, N. C.

## THE READERS'

# CLEARING HOUSE

## of Servicemen's Queries



### Replacing Mains

Would appreciate any help you can give me in regard to replacing the main bearings in a 1937 Chevrolet. I would like the procedure from removing the pan to taking out and replacing the bearings.—E. H. Benz, 801 Addison at Halsted St., Chicago, Ill.

IN reference to your query on details of replacing main bearings in a 1937 Chevrolet, I would like to point out that, on knee-action jobs it is necessary to remove the motor support member, disconnect the tie-rod, remove flywheel pan and the main bearing shield pan. On conventionally sprung jobs, it is not necessary to remove the engine support member. However, if you plan to replace the upper part of the bearing, it is necessary to remove the engine from the chassis as the upper half of the bearing is dowed in place and cannot be removed with the engine in the chassis.

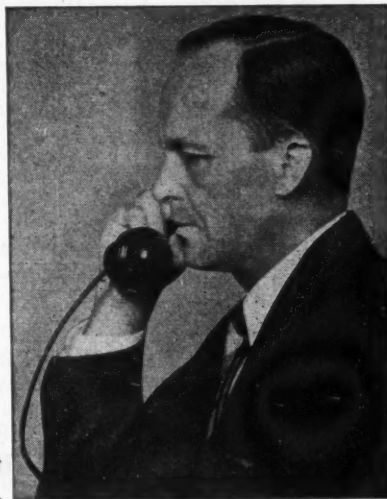
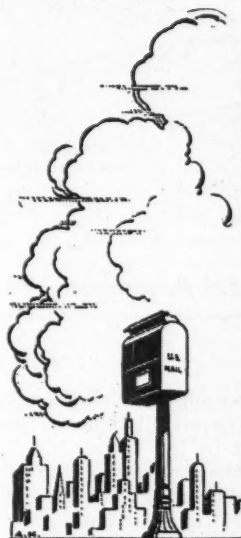
### Noisy Transmission

The problem at hand that has me stumped is a 1941 DeSoto with a fluid-drive unit which, when starting, sounds like the transmission is going to tear out when you accelerate rapidly. If you just baby it along, it is all right.

At first, it felt like the clutch was slipping, so we removed the transmission and installed a new disc, as the cushion springs in the center of the plate were all loose.

While we had it down, we checked the fluid-drive unit for fluid and it was O.K., but, when we rotated the plate the clutch assembly rides on, it sounded like the fluid-drive discs were hitting one another. We removed this unit, found the rear running ball bearing worn, so replaced this bearing and eliminated the rubbing at this point. We felt sure we had licked it, so we reassembled the transmission and road-tested the car, but it was just the same as before, although it did shift a lot smoother.

We replaced the rubber diaphragm in the vacuum unit on the side of the transmission, as the old one was



Bill Toboldt, Editor, Motor Age

stretched badly. We drained the fluid in the transmission and checked it to see if there were chips or grindings but it appeared all right.

It seems we have tried everything but, as yet, haven't hit the right thing. We are miles from any large Chrysler dealer and, what with gas rationing, it's impossible to get a consultation with a shop foreman who might help us out.

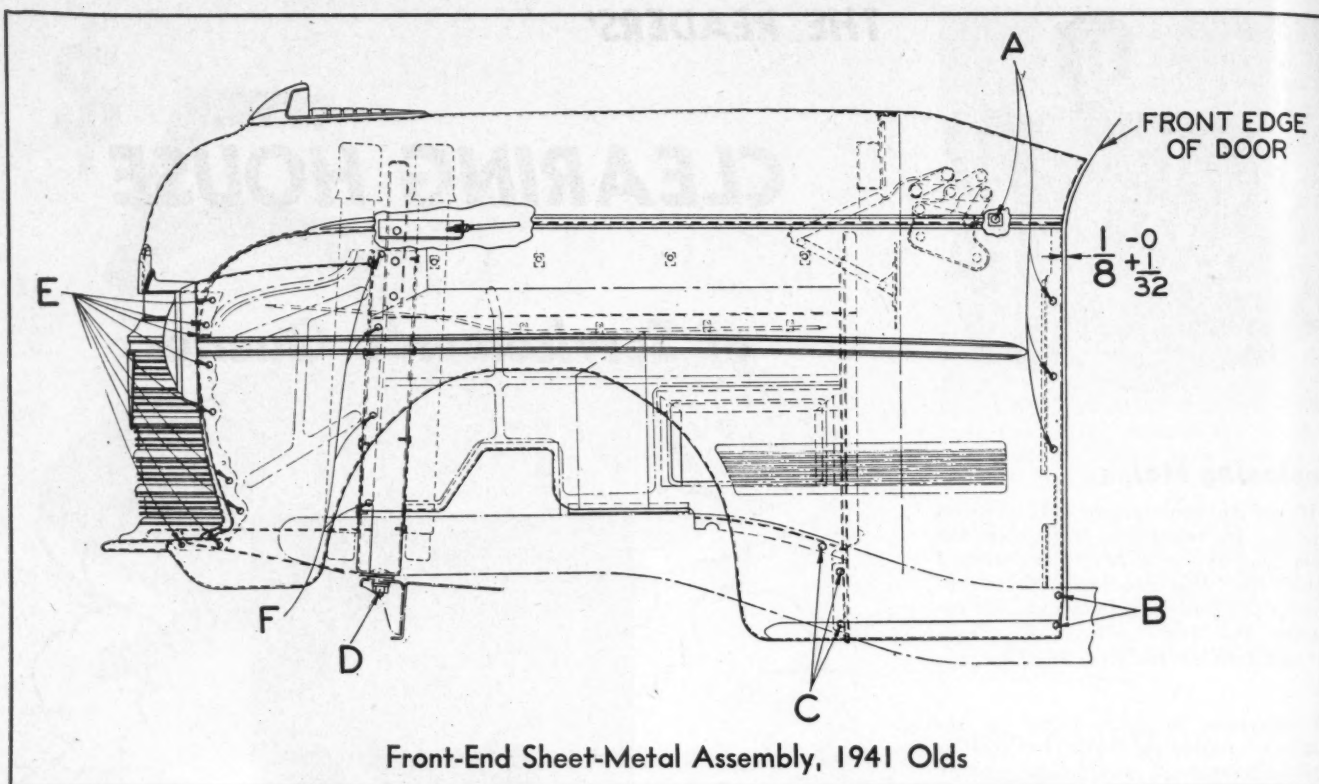
This noise is just like gears clashing together and most any time you expect to get out and pick up the transmission in a basket.

You can hear the solenoids kicking in and out as they should and everything seems to be O.K. in the electrical circuit.

I have been in the Army for a little over two years and, up till the time I entered the service, I had done very little work on cars with fluid drives. Any suggestions or kinks that you

may be able to send my way would be greatly appreciated.—Sgt. Arthur R. Packard, 2nd Academic Sqdn., Keesler Field, Miss., Box 748.

I HAVE studied carefully the trouble you are experiencing with the 1941 DeSoto and, while you have replaced one bearing, there are several others that might cause the trouble you are having. There is a ball-bearing supporting the front end of the transmission shaft. This bearing is directly in the center of the fluid-drive unit. There is a second bearing immediately immediately to the rear of the clutch which is a throw-out bearing and in addition, there is a ball-bearing at the front end of the transmission case. All these should be carefully checked to make sure they are in satisfactory condition. I would also suggest you make sure you are using the correct type of oil within the fluid drive itself.



It is rather difficult to determine just what is wrong with this unit, but I do not think it is in the fluid flywheel itself but is more likely to be in the transmission or in some of the shifting mechanisms.

## Valves Won't Seat

*We have a 1937 Lincoln V-12 that has us stuck. It has been to several garages before it landed here.*

It came in hitting on six. We checked the timing, put in breaker points, got her to hitting on ten. Tried compression tester, found no compression on two cylinders, lifted the head and valve plate, found two broken valve springs and replaced them. But, when we tried to seat the valve, it would not seat by  $1/16$  in. on two of valves.

*It has hydraulic valve lifts and, no matter what we do, those two valves will not seat. I took the hydraulic lifters out, washed them with gas. The spring holding ball bearing inside is O.K., and the surface of the cylinder is smooth and bright, not burned or scored, and when we try to replace valve keeper under spring, the hydraulic lifter seems to build up pressure and hold the valve open.*

*I cannot figure it, unless the valve stems are too long. Would you send me some information concerning this hydraulic lifter?—Frank Heffelfinger, Galion, Ohio.*

**A**FTER studying the trouble you are having with the hydraulic valves on that 1937 Lincoln, I believe that there is dirt in the line or that

you have not thoroughly cleaned the lifter and removed all oil from it before replacing it in the engine.

It is impossible to overemphasize the necessity for thoroughly cleaning and removing all dirt from the entire system in order to maintain satisfactory operation of hydraulic valves. That is why cars with hydraulic valves are always equipped with an oil filter. The slightest particle of dirt will spoil the operation of these lifters.

I would suggest that you remove these two lifters once more, wipe all the oil from them, drain and flush out the crankcase, and then replace the lifters. If that doesn't overcome your trouble, you have some defective parts or you have mixed them and, in either case, it will be necessary to obtain new lifters.

## Battery Killer

*I have a 1941 Chevrolet club coupe on which the battery goes down in about two or three weeks.*

*I have disconnected the switch on the starter that goes to the ignition and have wired around it. We have put about five new batteries in this car. I rebuilt the generator, installed a new voltage regulator, and checked the complete electrical system with an A.V.R. meter. The generator output is 30 amps., the voltage is 8 volts. I have tested this car direct from the battery, disconnected the positive wire on the battery and it doesn't show minimal on the positive wire and one on the battery, put one voltmeter terminal drain there at all. I also have put in a new stoplight switch, have boost-*

ed the generator to charge 40 amps. and 9½ volts but it does not keep the battery up.

*I have a friend, who is an electrical engineer, and he checked the car with the A.V.R. Model 220, and he cannot figure where the loss is. No drain shows anywhere.*

Another fellow told me to put a new generator on the car and see what it would do, but I can't see anything wrong with the generator. Please give me your advice.—Orin Diomedi, 1014 S. Commercial St., Mingo Junction, Ohio.

**T**HAT is certainly a very peculiar piece of trouble you are having with the electrical system on the 1941 Chevrolet. You state that you disconnected the positive wire on the battery and put one voltmeter terminal on the positive wire and one on the battery. This is, of course, incorrect, as a voltmeter should never be connected in series. If you connected the ammeter in that position it would, of course, show if there were any current being drawn. If you made the test with the voltmeter as you explained, I would suggest that you repeat it but use an ammeter instead.

However, from the description of the trouble, it would seem that possibly there is some short or drain on the battery that occurs only when the car is being driven. If that is the case, I would suggest that you carefully investigate the ignition switch and the stoplight to make sure that they are operating correctly and not placing an undue drain on the battery. I would also suggest that you

try another generator, just to make sure that there is no short or other defect that would cause the abnormal discharge.

I would suggest that you also check to make sure the driver doesn't leave the ignition switch or headlights on when the car is not in motion. Also, if the car has a radio, possibly it is used excessively and in that way the battery is overloaded.

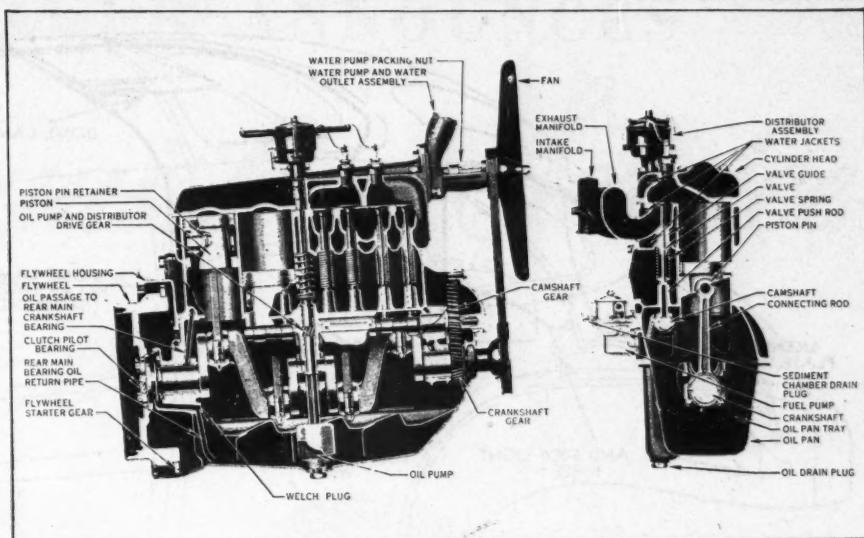
## Operating on Diesel Fuel

I have been working in conjunction with a local garage on an idea which is neither new nor original. In 1936 I equipped a Model A Ford to run on Diesel oil by heating the oil prior to entry to the carburetor. To heat the oil, I wrapped the oil feed line around the exhaust manifold while the car was running on gas. After the oil was hot, by proper adjustment of the carburetor, satisfactory combustion was obtained when the carburetor was switched from gas to oil. Before stopping the car, it was turned back to gas. The only other adjustment was the insertion of a fine copper screen in the intake ports. This car worked quite satisfactorily.

Going on the basis of the above, I have equipped a 1932 Model 900 eight-cylinder Packard in similar fashion, wrapping the copper oil tubing to the manifold with asbestos. The car runs five to ten minutes then stops after being switched from gas to oil. In neither of the above cases were spark plugs considered, nor any ignition adjustments made. In both cases, the hot oil passed into the carburetor. In the Ford, the carburetor could be adjusted for good combustion of oil. In the Packard, no adjustment made to the carburetor seems to improve the length of time the car will run on the oil.

Can you tell me why this is true and what can you suggest for the Packard? I feel that something can be done to perfect the conversion and there have been many arguments on the subject around the neighborhood. —James P. White, 143-44 14th Ave., Whitestone, N. Y.

THERE are several points which, in my opinion, you might investigate



on your Packard which you have been unable to operate successfully on fuel oil. First of all, I would like to point out that it might be a question of manifolding. The Model A Ford, of course, was a four-cylinder job with short manifold and consequently there is not much opportunity for the fuel to condense before it reached the valves and the cylinders. On your Packard, with eight cylinders, the manifold is, of course, much longer and there is therefore a greater possibility for the fuel to condense.

I would suggest that you remove the manifold after having tried to operate the car on fuel oil in order to see if any fuel oil has accumulated. As a matter of fact, you might drill a small hole on the bottom surface of the intake manifold which then could be closed by means of a plug. This would simplify checking to see if any fuel oil accumulates.

Another but somewhat similar thought is, are you supplying enough heat to the fuel oil before it reaches the carburetor? Because of the greater cooling effect of the Packard manifold it might be necessary to supply more heat to the fuel oil.

While I personally can't see what difference it would make, I would also like to point out that the standard carburetor used on the Model A Ford was a relatively simple unit without

an economizer or accelerating pump. The Detroit Lubricator carburetor normally supplied with the 1932 Packard is more complicated. In this connection, you might try operating the carburetor without the accelerating pump and economizer in order to make it as similar as possible to the original Ford unit.

To return to the question of heat, you might, as an experiment, try heating the manifold gently with a torch in order to obtain better vaporization of the fuel. If the engine operates under this condition it would then, of course, indicate that in some manner you would have to supply additional heat in order to keep the engine operating.

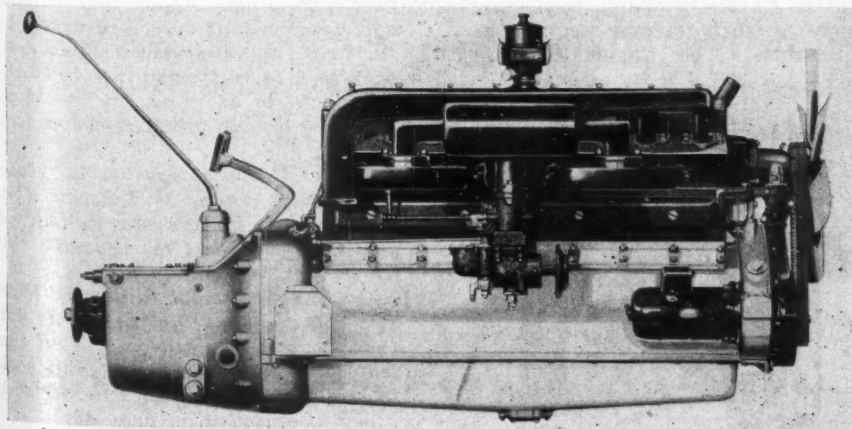
## Radiator Repairs Fail

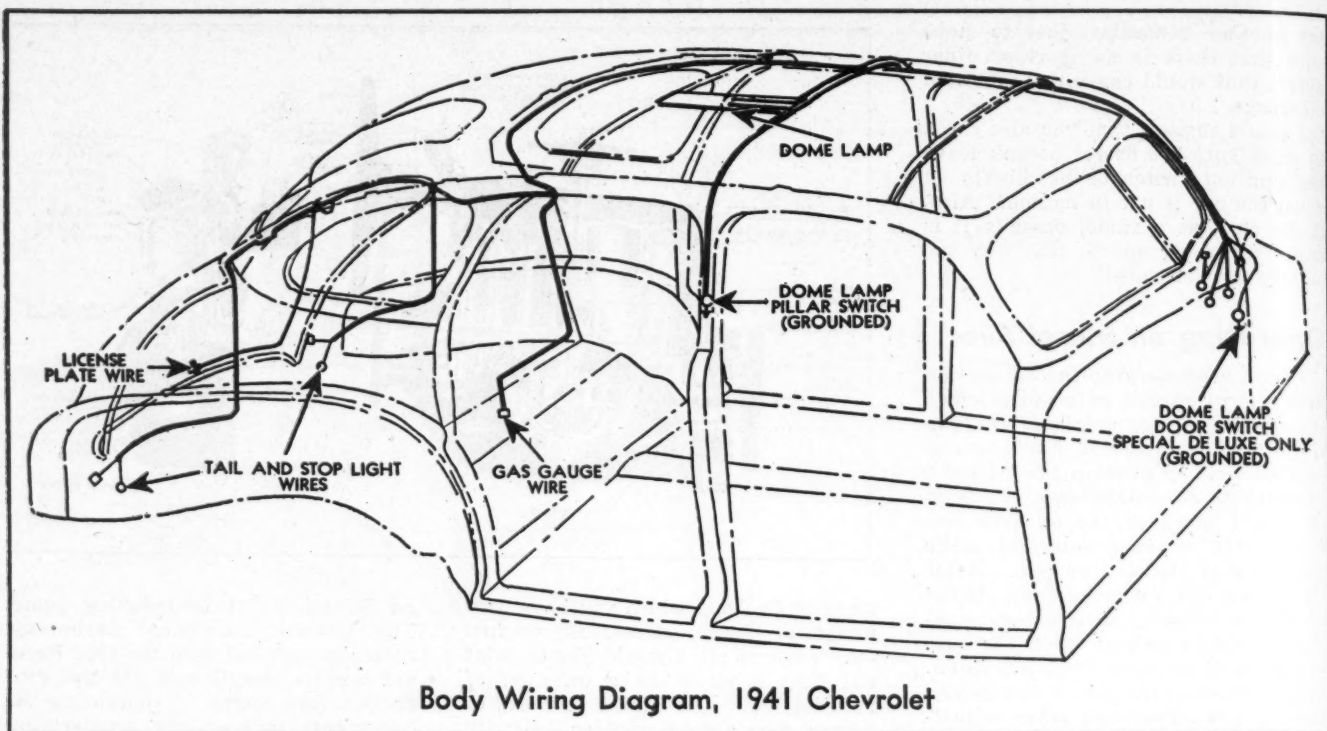
We have removed and repaired a radiator on a Mercury 1942 Ford three times in as many weeks, but cannot make it hold. We were advised to leave the side brackets off but that didn't help. This car is used in the oil field here on ordinary graded roads that are far from being a highway, but, if that is the cause, we feel our work should last longer than two or three days.

The breaks always come in the upper corners of the radiator—The Frannie Motor, Frannie, Wyo.

AS you point out in your letter, it is difficult to understand why the repairs you are making on the Mercury radiator do not last. Assuming, of course, that you are doing a good job of repairing, it would seem to me that the most likely cause of the trouble is a loose radiator core, or possibly some of the hood or side panels are rubbing against the radiator core, thus causing the leak.

I would suggest that you carefully examine the core to see if it is loose in the chassis, paying particular attention to the foundation bolts and also the brace rods. I would also suggest that you carefully check the front





cross member on which the radiator core rests, as there is a possibility that it is loose.

I would also recommend that you check all of the cross members of the car, for if any of these are cracked or broken it would result in excessive frame weave and consequent excessive strain on the radiator core.

### Trucks Quit

Our trucks ran O.K. till the last few days, then they seemed to develop vapor lock. We still use the same gas. The trucks run O.K., then all of a sudden they stop, after waiting a while they start again, work O.K. and then the same trouble occurs again. Have you a solution for this? The trucks that cause the trouble are International.—William Eisberg, 3402 N. Clinton St., Fort Wayne, Ind.

**Q**UITE possibly the trouble you are experiencing on your International trucks is caused by vapor lock. However, before deciding that this is the cause, I would suggest that you make a thorough check to make sure it is not caused by a clogged fuel line, a defective fuel pump, or dirt in the carburetor jets. I would recommend that you carefully blow out the fuel line from the pump to the tank and also carefully investigate the flexible hose line leading to the fuel pump.

In addition, of course, you should make sure that the fuel pump itself is operating satisfactorily, and also disassemble and thoroughly clean the carburetor.

If your trouble persists after these checks, I would suggest that you install an asbestos gasket about  $\frac{3}{8}$  in. thick between the carburetor and the manifold. In addition, you might drill a fine hole of about  $\frac{1}{64}$  in. to  $\frac{1}{32}$

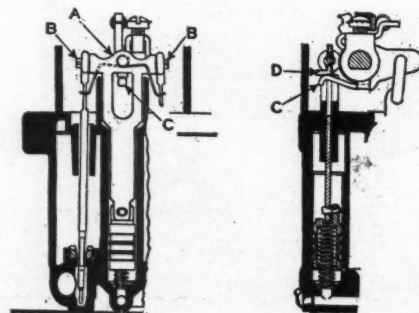
in. in the top of the carburetor float bowl in order to provide some ventilation.

### Overhauling Carburetors

*I am having trouble with several Buick and Pontiac carburetors, models from 1938 to 1941. The mixture is too rich at idle speed and the motor chokes up and stops. Then when I start it again and speed it up several times to burn the excess gas, it will run O.K. for a minute or so and then start choking up again. The idle adjustment has very little effect.*

I have rebuilt some of these carburetors and it did not help the condition at all but, when I installed a new carburetor of the same kind, it corrected the trouble. I followed the instructions when rebuilding but have missed something. Can you tell me what it is?—A. L. Reaves, Box 246, Bishopville, S. C.

**I**T is rather difficult to state definitely what mistake you are making in overhauling the Carter carburetor. I would suggest that you write direct to the Carter company, requesting a copy of their step-by-step overhaul procedure. The Carter manual is



very complete and gives an illustration for each step in the service procedure.

I wonder if, by any chance, you have made a mistake in the metering-rod adjustment. This is very critical and Carter supplies the necessary jigs for use in the different models of carburetors.

It also occurs to me that your difficulty might rest in the automatic choke. This should have been checked the same time you overhauled the carburetor, and quite possibly this is the source of your trouble.

### Excessive Smoker

*I would like some advice concerning a 1940 Ford. This car, within the last 6000 miles, has developed an excess amount of smoking, coming out the crankcase breather and seeping back through the cowl into the car. Here is some data on this motor: It gets well over 550 miles to a quart of oil. The compression test is 110 lb. on seven cylinders and 98 lb. on eight cylinder.*

*The motor makes some piston-pin knock at idling. About four months ago, I noticed, at speeds in excess of 40 m.p.h., the oil pressure would drop back to 6 to 10 lb. and, upon returning to 25 to 34 m.p.h., it would go up to 20 lb. At idling it drops back to zero.*

*I found the spring on the ball-check valve worn, so I replaced it. This brought the pressure up O.K. at running speeds but the pressure still drops back to zero at idling.*

*Could you attempt to answer these two questions? Why does this car smoke out the breather so much and why does the oil pressure drop back to zero at idling speed? This car does*

(Continued on page 48)

STUDEBAKER ANNOUNCES

# *Distinguished Service Emblems*



to be awarded dealers' employees  
in recognition of ability

The workers in Studebaker's Aviation Division and Automotive Division plants have received the Army-Navy "E" Award for excellence in the production of war equipment.

And fitting recognition is also being given by The Studebaker Corporation to the service employees of Studebaker dealers whose work, although highly essential in the war effort, does not qualify them for the Army-Navy "E" Award.

Periodically, especially capable service managers, shop foremen and service mechanics in Studebaker dealers' establish-

ments are being given silver or gold lapel emblems, as illustrated above.

The silver emblem bears the inscription—Studebaker Qualified Mechanic. The gold emblem, given to those of longer experience, is inscribed—Studebaker Master Mechanic.

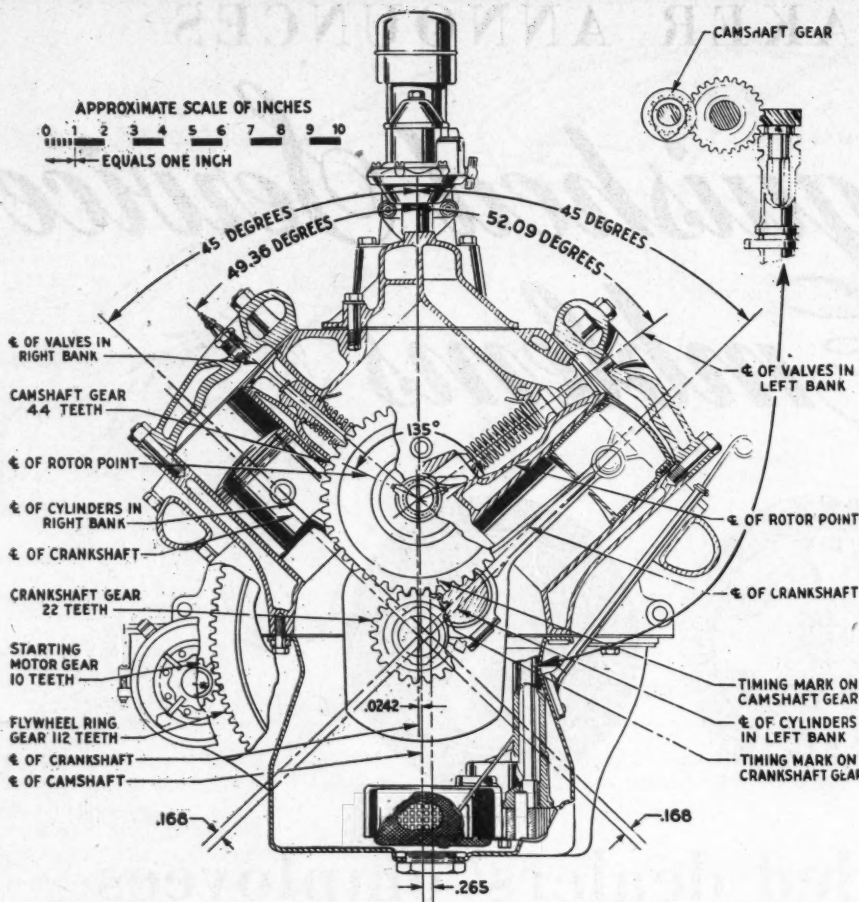
Studebaker dealers' service employees have contributed much to the maintenance of vital war transportation on the home front. The Studebaker Corporation takes pride in providing these special awards as a mark of its appreciation of important war work effectively done.

## *Studebaker*

PIONEER AND PACEMAKER IN AUTOMOTIVE PROGRESS

*Now building Wright Cyclone engines for the Boeing Flying Fortress—  
multiple-drive military trucks—other vital war matériel*

*When writing to advertisers please mention Motor Age*



(Continued from page 46)  
not smoke out the tailpipe, even under severe acceleration.—Richard N. Rice, 212 Parker Ave., Kirklyn, Pa.

IN reference to the trouble you are experiencing with the 1940 Ford, I am inclined to believe that the smoking out of the crankcase breather is the result of excessive blow-by past the piston rings. The only effective way of overcoming such trouble is the installation of new piston rings. In extreme cases, it is necessary to recondition the cylinder walls and install new oversize pistons and rings.

In connection with the drop in oil pressure, I would suggest that you make an oil-pressure test on the bearings to see just which ones are leaking and from that you can then determine which bearings need replacement.

As a result of wartime driving with short trips that seldom gets the engine up to full operating temperature, cylinder and ring wear is accelerated and it is quite possible that this is the cause of your present piston-ring condition.

### Brake Adjustments

I have trouble adjusting brakes on 1936 Studebakers after I reline them. I have tried two or three types of brake lining. I tried setting anchors and bleeding the lines. I can't get enough brake on the rear wheels. The brakes I do get are 80 per cent on

the front and the two front brakes are not equalized.

This car has the step-down cylinders and  $\frac{1}{4}$  in. lining. What would you advise? Also, I do not get more than a quarter pedal although I can pump it up. Chicago, Ill. Reader.

FIRST I would be sure that the wheel cylinders are the proper size—front and rear. The front and rear cylinders are not the same size and if, through error, one of the rear cylinders has been put on the front you would have difficulty and, in fact, it would be impossible for you to equalize the front brakes and to get proper braking in the rear. The cylinder bore sizes of the wheel pistons are marked on the cylinder casting and, to assist you in locating the proper cylinders, the front-wheel brake cylinders have bore sizes of  $1\frac{1}{8}$  in. for the forward piston and 1 in. for the rear piston. The rear brake-cylinder bore sizes are  $1\frac{1}{4}$  in. for the forward piston and 1 in. for the rear piston. It is also important to see that the larger bore of the wheel cylinder is placed in the backing plate so that it will operate the forward shoe.

Having satisfied yourself that the correct wheel cylinders are used and that the cylinders themselves are not scored and that the cups and pistons are in good condition so that there is no leak or loss of compression, I would then check the location or adjustment of the anchor pin. This is particularly

necessary after the brake shoes have been relined. The proper adjustment is to loosen the anchor-pin lock nut on the rear of the backing plate and turn the eccentric anchor pin, at the same time rotating the shoe adjustment cam until the shoes are set so that there is .005 in. clearance at the lower end of the shoe and .010 in. clearance at the upper end. This measurement should be taken with the feeler gage placed about  $1\frac{1}{2}$  in. from the end of the lining. If you will perform this adjustment pretty carefully to be sure that you get the proper clearance at the upper and lower ends of the shoe and then lock the anchor pins in place, I feel quite sure that you will get the proper brake adjustment.

### Air in Water Heater

I wonder if you can tell me what the trouble is with a car heater that continually fills up with air. The heater is in a 1937 Dodge coach. It was installed when the car was new and has worked perfectly up to this year.

I can let the air out of the heater and it will work perfectly for two or three miles and the air accumulates again and the circulation stops. So I was wondering if you could explain or tell me what to do with it.

I have put in a new thermostat, cleaned the heater out, had the radiator cleaned, put on a new hose, and tied up the heater to two places on the head.

The top circulating lines of the heater are going into the head at the regular heater opening and the extra line goes to the temperature-gage opening. The bottom line is tied in the bottom of the hose between the radiator and the pump—J. B. Roberts, Rear 65 Willow St., Plymouth, Pa.

FROM the description you have given of the heater on your 1937 Dodge, I am not quite sure whether or not it is correctly connected. However, assuming that it is correctly installed, I think your trouble might be caused by a defective water pump that is sucking in air. I would recommend that you install a new water pump and also use some of the gasket compounds or shellac on the hose connections.

Another mistake that would contribute to this condition would be mounting heater too high. In other words, the top of the heater must be below the top of the radiator, otherwise you will pocket air in the heater. As a matter of fact, it is advisable to have the top of the heater at least 6 in. below the top of the radiator.

Another very important point to check is the cylinder head gasket. There have been occasions when a blown head gasket has resulted in excess air getting into the heater line as you describe.

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More  
Profitable  
Production...  
with the*  
**TRUCUT**



**Y**OU can get MAXIMUM PROFIT out of every job with the TRUCUT Armature Lathe and Undercutter. The TRUCUT machines and undercuts commutators in 5 minutes, making them like new.

With the TRUCUT you can handle more jobs, do the work faster, more accurately, and more profitably.

Write us. We will tell you all about TRUCUT Equipment, and tell you about the experiences of some of the many shops that are TRUCUT equipped.

Write us, or see your jobber today. Better delivery is possible at this time when the TRUCUT Lathe is ordered without motor.



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## Streamlined Shop

(Continued from Page 33)

\$4.50 as an average, and often as high as \$8.50 or more, depending upon what is needed.

No high-pressure sales work is allowed. Customers are advised to buy only what is necessary, either in labor or material needed. This holds true of changing crankcase oil, filling the transmission and differential, replacing batteries and tires, as well as for repair work.

The essence of Stonebraker's war-

time service work is based on customer good-will. No advertising is done to solicit new repair business. "Our customers come first," he says, adding that the good-will built up now will have much to do with the prosperity he hopes to enjoy after war.

The extra business which the new location affords is highly important during wartime, but Stonebraker is convinced that they will be even more far reaching in the post-war era. For example, before gasoline rationing became effective, his sales averaged 10,000 gal. a month from the four pumps in front of the office-sales

room. They still run 6000 gal. a month, and obviously, lead to many lubrication and service jobs, as well as sales of oil, batteries, and other replacement items.

The present location is convenient for customers. Although it is on the north edge of town, there is plenty of parking space. Besides, many farmers are good customers, and like this spot better than a downtown place where traffic is crowded.

Stonebraker is building for the future. He is counting on cross-country tourist trade after the war. He bases that idea on what happened before, when it was a commonplace to see on the gasoline island or in the shop cars from seven or eight states at one time. U. S. Highway 6 is one of the main highways between East, Midwest, and points west for touring motorists, who will be eager to satisfy their travel hunger as soon as conditions permit.

Acting on his convictions, Stonebraker recently purchased additional property west of his present location, to take care of any expansion program he may wish to make when post-war business demands it. He also strengthened his program with the modern equipment necessary for speedy, but accurate service—analyzers, valve facers, two hydraulic hoists, two hydraulic jacks, slow and faster battery charger, and small tools needed for speedy work. For, in addition to new-car sales when the war ends, Stonebraker is convinced that maintenance will be a bigger factor than ever.

He sees an almost unlimited demand for new tires, tire service (whether done in the shop, or farmed out profitably), batteries, accessories and replacement items. Further to support and promote customer good-will, this progressive dealer has not raised the price of parts (excepting those from certain jobbers whose prices are higher), and has not boosted labor rates beyond those prevailing in the areas.

## Clutch Trouble

(Continued from Page 29)

Loose spring shackles or springs loose in frame members.

Defective pilot bearing.

## VIBRATING NOISE IN CLUTCH

(At One, Certain Speed in Direct Gear)  
May Be Caused By

Damaged clutch plate (flexible-center type).

Bent clutch shaft.

Unbalanced drive shaft.

Lack of proper alignment between engine, clutch and transmission.



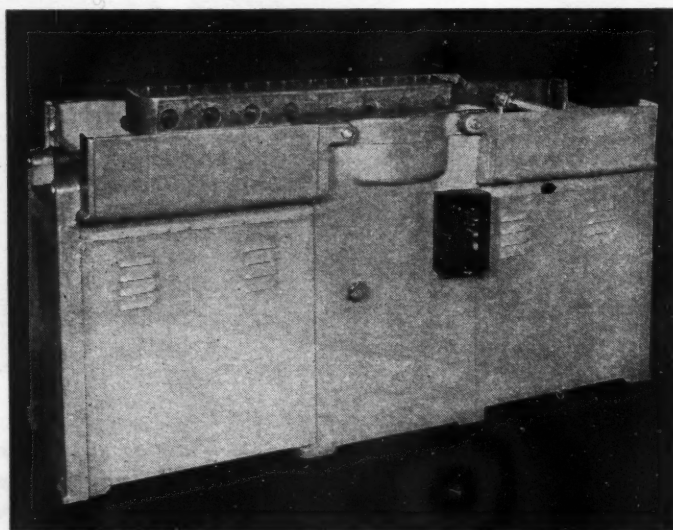
The Star is for Continued Outstanding Performance.

**PROVED • IMPROVED • PERFECTED  
ON OUR OWN  
PRODUCTION LINES**

# LEMPCO

**DESIGNERS • BUILDERS • USERS  
OF PRODUCTION-PROVED  
MACHINE SHOP EQUIPMENT**

**Wet  
Surface  
Grinder**



MODEL  
DG

Write for Specifications

# LEMPCO

5727 DUNHAM ROAD  
BEDFORD, OHIO U.S.A.

**FOR BLOCKS • HEADS • MANIFOLDS ETC.**

At \$4.50 per head, average, the Lempco Model DG Disc-type Surface Grinder makes a big profit. 16" diameter wheel; 5 H. P. motor; steel rollers make light work of the heaviest blocks; self-priming coolant pump. Get set for a big volume keeping 'em rolling now—and for years after the war is ended. Now's the time to make capital investments.

**CEILING PRICED!**



*Don't get yourself behind it!*

It's bad business to get behind that old 8-ball. So stay out in front with the ring leader . . . McQuay-Norris Altinized Engineered Set Piston Rings. That's the way to avoid come-back jobs, build your reputation and make more money.

*Always call your McQuay-Norris jobber first!*

McQUAY-NORRIS ALTINIZED ENGINEERED SET PISTON RINGS are designed and made to give new life to old and worn motors. There's a set of these rings engineered specifically for each make and model of car.



# McQUAY - NORRIS

PISTON RINGS • PISTONS • PINS • VALVES

BOLTS • BUSHINGS • SILENT-U SHACKLES



BEARINGS • SLEEVES • PUMP PARTS

WHEEL SUSPENSION PARTS

JULY, 1944

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51

## Scrap Pile to Front Lines

(Continued from Page 22)

sold for scrap. Much material is also scrapped because the cost of reclaiming it would be more than the cost of procuring new material.

When Army trucks are issued originally they are generally accompanied with enough parts, tools, and special equipment to keep the trucks in operation a full year. In this way, an officer who receives a consignment of trucks knows that the Ordnance warehouse nearest the point of issu-

ance of the trucks has received equipment necessary to keep the truck in running order. Parts that are reclaimed and reissued are added to these stocks, and are issued to any branch of the Army within that area that puts in a request for such material.

To aid officers in the segregation of all parts, lists of critical and excess items are issued. Critical items are used until they are no longer of any use, while excess items do not get beyond the third echelon.

Army Ordnance is repairing and rebuilding about 70,000 automotive vehicles a year by a new line-pro-

duction method used in fifth echelon shops in this country. Only about 1 per cent of these are automobiles, the remainder trucks and heavier vehicles. There are 10 of these shops, located at Fort Devens, Mass.; New York; Richmond, Va.; Atlanta, Ga.; Newark, Ohio; Chicago; Topeka, Kan.; Camp Mabry, Tex.; Los Angeles, and Tacoma, Wash.

The mammoth Mt. Rainier Depot at Tacoma maintains all Army vehicles in the Pacific Northwest and Alaska. The automotive repair shops occupy eight acres of floor space, employ 600 civilian mechanics and turn out, among other things, some 600 vehicle overhauls, 800 rebuilt engines, 500 transmissions, axles and transfer cases, and more than 4000 minor units each month.

Into Mt. Rainier come disabled vehicles of every type, many of which have been wrecked through heavy service along Alaskan highways. These vehicles are completely overhauled and repainted, and roll forth to be reissued for supply and training of new units in the United States.

In this recovery operation, the greatest possible use is made of rebuilt assemblies and reclaimed parts.

Incoming engines are steam-cleaned, placed in wooden cradles, and hoisted to a knee-high roller-way production line. Mechanics then dismantle them. They strip off every bit of "jewelry," as they call the external gadgets comprising the electrical and carburetion systems, the springs, valves and tubing. In a short time, only the bare block remains.

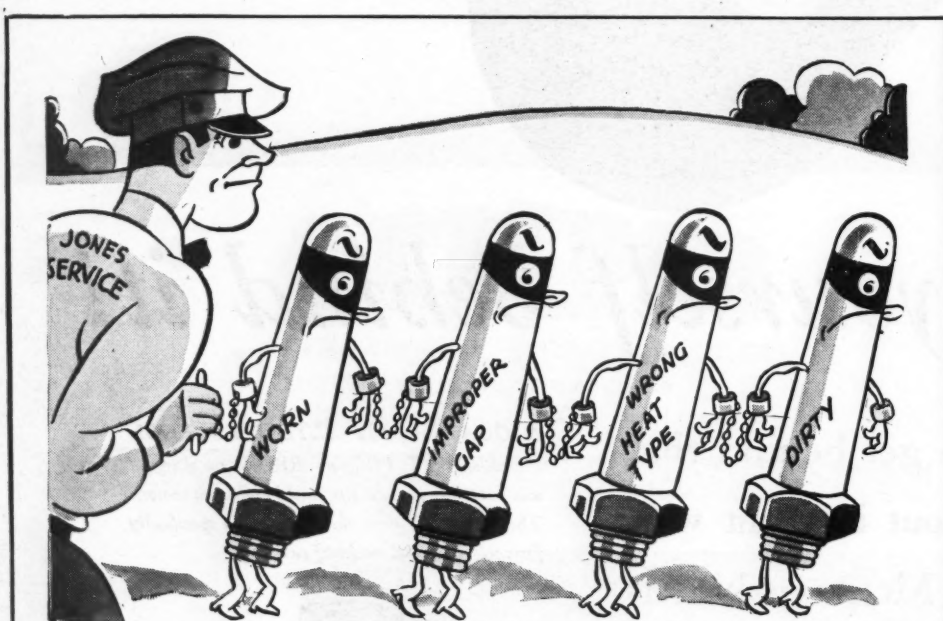
Every part removed goes into a stockpile for salvage inspection and reclamation, if at all possible. Along the assembly line are small departments that specialize in making these essential parts new again.

Technicians with micrometers measure carefully the cylinders to determine whether a reboring job is indicated. The engine is then built up again with either new or reclaimed parts, crankshaft, pistons, connecting rods, valve stems, springs, bearings. All the outside "jewelry" is added, and the rebuilt motor is carefully tested.

Component parts of vehicles other than engines are reclaimed in similar manner, being disassembled, cleaned and moved to particular departments specializing in every type of assembly. Front and rear axles, transmissions and transfer cases are rebuilt on special jigs and are tested against load. Radiators of all types from jeeps to General Sherman tanks are recovered in the radiator department which turns out approximately 900 finished units a month.

Another interesting subdivision is the battery shop where 1000 batteries a month are rebuilt on a miniature production line.

The work performed at the Mt. Rainier depot is duplicated in the nine other shops.



## You can handcuff these "POWER THIEVES"!

Tell this to every motorist who drives in—"It's like being robbed of one gas coupon in every ten to drive with faulty plugs!" That should help you sell

regular plug check-ups. (And a plug check often reveals the need of other service, too.) When new plugs are needed, install Edisons. They get full power from every ounce of fuel—and that "greatest name in electricity" makes them easy to sell!



# Edison SPARK PLUGS

EDISON-SPLITDORF CORPORATION, WEST ORANGE, N. J.



## Here's a postwar plan for *Your* TREASURE CHEST

**M**ANY mechanics have a postwar plan all of their own. It's simply this: "I'm going to own a Blackhawk Treasure Chest someday!" A few \$25 war bonds in the sock now will assure you, too, of equipment for that Great Tomorrow when the automotive field will again roar with new cars, plenty of gasoline, tires and parts—when you will want to be "King of the Shop" with silver-bright Blackhawk Socket Wrenches sparkling from a radiant red "Treasure Chest".

*Blackhawk Wrench Sets give you exclusive features which no mechanic in your shop can match with other equipment.*

A Product of **BLACKHAWK MFG. CO., Dept. W674, Milwaukee 1, Wis.**

# BLACKHAWK

If you must have new wrenches for your work today — see your Blackhawk Jobber — he will help you get what you need.

## Faster Work Saves Man-Hours

**T**OMMY STOKES owns and operates a super-service station at 27 S. Division St., Battle Creek, Mich. He sells gasoline and oil, necessary automotive parts and does every kind of service from engine tune-ups to complete overhauling. Because most of his business is neighborhood trade, he had to keep the customers he had and this meant he had to give them the service they needed, not an easy task.

When his last mechanic quit without notice to take another job, Stokes tightened his belt, and let his customers know that a little matter of labor shortage wasn't going to stop him.

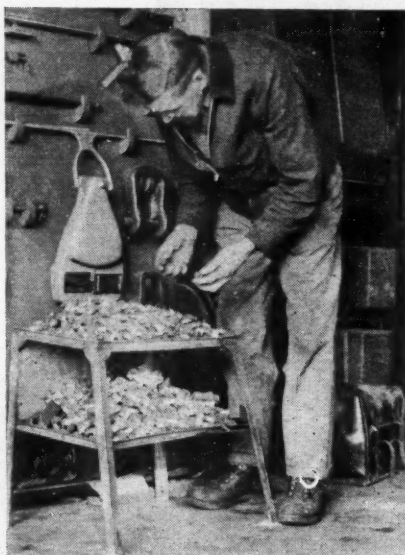
"I never could have kept my promise," Stokes declared, "if I hadn't put in every piece of labor-saving shop equipment I could buy before we got into the war. These units combined with the short-cut plan that I sold my customers on saved the day for me."

To illustrate, Stokes saves two to three hours on most engine jobs, saves customers' money, serves more customers. "I test compression first," Stokes said. "If that is the trouble, I don't have to do anything else. If the motor analyzer says compression is bad, and the engine uses too much oil, we do a valve grinding job and install new rings. We go by the various testing units, for each important engine part, such as armatures, generators, and distributors.

"The old way was the guess-way, and most of the 30 to 45-minute jobs can be done now in five minutes. Our aim is to conserve time. Tire and battery conservation is important, but these are being subordinated to gasoline and oil economy, so we correct compression first, keep ignition in the pink of condition, and clean carburetors at least twice a year, and in proper adjustment for present-day gasoline.

"In other words, we check carburetor, fuel pump, generator, starter, battery, condenser, coil, armatures and distributor, but *work* on only those requiring immediate repairs or adjustments. We discourage the complete motor chassis overhaul during the emergency and carefully explain the reasons to our trade.

"However much we are trying to conserve time and materials, we still



sell our customers on the benefits of a new unit if and when we know the change will save oil, gasoline or other vital units. Here again, our testing equipment helps do the job thoroughly, quickly and satisfactorily.

"Another very important item is spark plugs. We aim to save our customers about 50 per cent on their plugs, by urging them to have same removed and sand blasted often enough to keep them clean, and in proper adjustment. One of the best stunts we ever used to promote goodwill and sell more service was a large double stand in which we tossed worn-out plugs and kept them where every visitor could see them. At one time we kept a sign above the stand with these words on it: 'If any of these plugs are better than the ones in your car, help yourself to a set.' That sold thousands of plugs.

"The next big time-saving device is our fast battery charger.

"We use a large, portable lube machine for chassis lubrication jobs. While doing this job, we check for wheel alignment, brakes, tires and battery."

Stokes says the advertising he does today is meeting people on the bowling teams he rolls against. "It seems just natural," he declared, "for people to ask about some kind of a service job on the car, at these meetings."—A. E. Holden.

## Wartime Service Pioneer

(Continued from Page 30)

war to be an attractive young lady. Customers who drive to work in town can leave their cars at the shop and go the rest of the way in the wagon.

Schedules have been printed on blotters, which are given to customers. A clock at the service entrance indi-

cates when the next trip leaves. The whole venture has proved extremely successful. Coberly says it has been inexpensive to maintain, and, as the station wagon ambles about the city is an excellent piece of advertising. Also it has eliminated the need for

call and delivery service. Customers think it's a fine idea, for there are no longer parking problems, and the walking back to the car at the end of a long day. Now they just walk to the corner and hail the wagon.

Coberly's, like most other service stations, has had to use the appointment system, since the staff is now reduced to 40 per cent of its peacetime size. To encourage and facilitate the making of appointments, a letter went to every customer enclosing a return mailing card, which the customer was asked to fill in with name, general type of work needed, and the time they wish to bring the car in. Over 90 per cent of their customers have cheerfully adopted this appointment system and now use the cards.

The parts department, instead of being hidden in a loft or back corner, is right at the drive-in entrance, and a counter displays accessories, polishes, and gadgets to catch the customer's eye.

A formal garden in front of the building is used for the display of especially tempting models.

Today the employees at Coberly's joke about another new idea—a landing field on the roof for helicopters, which will fly customers downtown after they fly in to the shop in their own airplanes. That is fantasy. Or is it? Some of the services offered by Coberly in these trying war days would have seemed fantastic not so many years ago.

## Hudson Holds Meetings

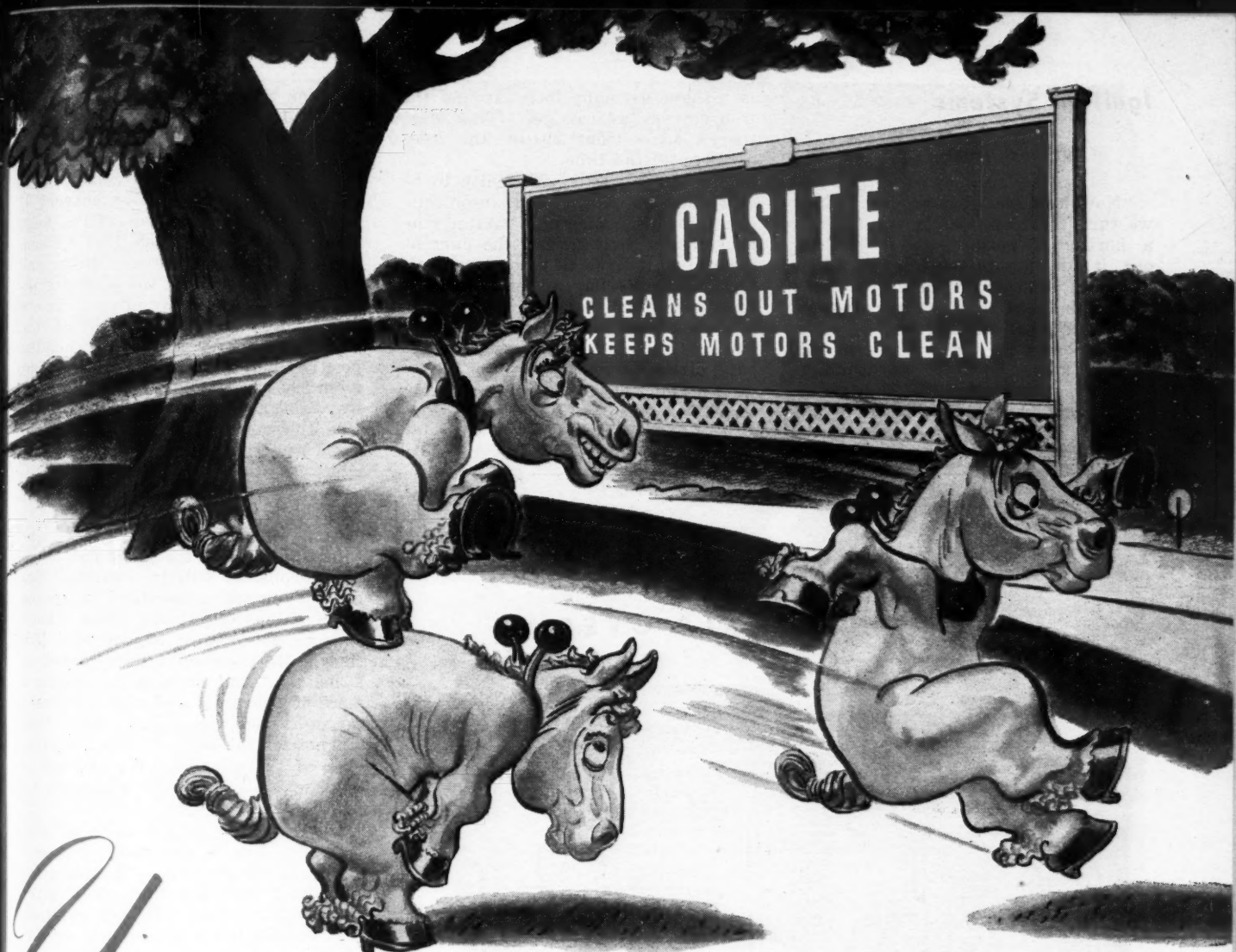
Distributor-dealer meetings are being conducted throughout the nation during June and July by George H. Pratt, general sales manager of Hudson Motor Car Co., with the theme of "Pre-war thinking will not be equal to the post-war job."

At the first meeting held in Kansas City, Pratt analyzed automobile registration figures since Pearl Harbor and asserted that all indications point to a demand, for several years after the war, which would exceed the industry's largest annual production in the past.

"There will be both capacity and willingness to buy," he said, "judging from the best available figures as to family savings and national income after the war."

At the same time, he warned dealers that, because of the scarcity of both new and used cars, they were likely to "find the going tougher" in the months just ahead, and urged them to develop further the service and parts ends of their business.

Other meetings are being held in Dallas, St. Louis, Milwaukee, Cincinnati, Atlanta, Washington, New York, Boston, Denver, Portland and Los Angeles with others to be scheduled later.



## *Young horsepower for old cars*

● Another summer, but the same old cars! And they must be kept going.

Freshen up those sludge-clogged motors and give them rejuvenated horsepower, with Casite. A Casite tune-up frees sticking valves and rings and prevents the harmful effects of sludge and gum. Casite carries oil to hard-to-reach places,

combats engine varnish, and gives a smoother flow of power. Result: better and smoother performance. A pint in the crankcase at each oil change, a pint through the carburetor at regular intervals, puts new life in aging motors and cash in your till.

THE CASITE CORPORATION • HASTINGS, MICHIGAN

**Guarantee** Add Casite to crankcase and run through carburetor according to instructions, then drive your car 100 miles or for 60 days, whichever is first. If not convinced that Casite gives you better and smoother performance, you get double your money back by filling out guarantee certificate and mailing it to The Casite Corporation, Hastings, Michigan. Maximum refund is \$1.30 per pint, twice the nationally advertised price of Casite.



### **TIE IN WITH THE CASITE SUMMER SALES "ROUNDUP"**

Put up the Casite Display Material. Play up the Casite "Double-Your-Money-Back" Guarantee. Car owners know and want Casite—and this extra profit is yours for the asking!

IT'S A PRIVILEGE... TO BUY WAR BONDS

## inition Systems

(Continued from Page 27)

"Now let's see what happens when we turn the loop. As it turns from a horizontal position to a vertical one, it cuts across the lines of force and, as I said before, an electric current is induced in it. But, when it reaches a vertical position, it ain't cuttin' across the lines no more and current stops flowin'. We couldn't have no arrangement like that, with the current stoppin' and startin' all the time, so what we do in generators

is to have as many loops around the iron core as we can get. That way, there's some loops cuttin' the lines of force all the time.

"But there's still a difficulty to be overcome, as far as an automobile generator is concerned. After the loop passes the vertical, the current induced in it flows in the opposite direction, so we have alternatin' current. That's all right for almost any purpose except for chargin' a storage battery and for that we've got to have direct current.

"That's where the commutator comes in. A commutator is made up of a series of copper bars with in-

sulation between 'em. The bars form a cylinder and fit on the end of the shaft that carries the armature windin'. There's two copper bars for each armature coil, one connected to each end. When positive current is bein' induced in one side of the loop, the positive brush takes it off. Then, as the loop, or armature, turns, and the current flows in the opposite direction, the negative brush comes into contact with that side of the commutator. At the same time, the positive side is carryin' off current from the other side of the loop. That way, the current in the circuit outside the generator is flowin' in the same direction all the time, which is what we want."

Pop noticed that Tommy was fidgeting a little on his chair.

"I know what you're thinkin'," he said. "I still ain't got around to ignition coils. I will in a minute, but first we gotta understand a couple more things electricity does. Let's suppose we have a loop of wire like this." He sketched a wire looped in a helix. "And suppose we place a piece of iron in it and pass a current through the wire. Just doin' that magnetizes the bar. That's the principle of the solenoid. We can use it to close a switch or do a number of other things.

"Now we get to the coil. It acts somethin' like a generator, but not quite. In the generator, the magnetic field don't move but the coil of wire, or armature, does. In the ignition coil, we keep the magnetic field movin' while the turns of wire stand still. If we have a coil of wire with a current flowin' through it, and then have another coil inside it but not attached to it, another current is set up in the inside coil, as long as we keep the magnetic field movin'. We do that by openin' and closin' the circuit, and that's what the breaker points is for. When the points is closed, current flows through the one windin' and a magnetic field is set up. Then, when the points open, the field collapses or moves back onto the windin'.

"Like in the generator, the lines of force will be stronger if we give 'em an iron core to flow through, so in a coil the turns of wire is wrapped around a core of soft iron with insulation between the turns. In an automobile, the current in the one coil—we call it the primary windin'—is supplied by the battery. The current from the secondary windin' is fed to the distributor and then to the spark plugs."

"But why," asked Tommy, "do they have to go to all that trouble? Couldn't they take the current direct from the battery to the plugs?"

"Sure, they could, but it wouldn't do no good. You can't make low-voltage current jump a gap between wires, and a storage battery in a car is only six volts. We need anywhere from 4,000 to 15,000 volts to make current jump a spark-plug gap. The

(Continued on Page 60)

## Knock-Out

### A. C. WELDERS

#### THE WORLD OVER



Engineered correctly by men with years of experience. Silent operation, ease in striking arc, wide range of application, low initial cost, economy of operation, negligible upkeep, burn-out proof transformers, all go to distinguish K-O Welders. These time-tested units are made to serve their employer well and show him a substantial profit whether on maintenance or production.



20 TO 550  
AMPS

See your nearest K-O  
jobber or write for bul-  
letin No. 5-74.

**K.O. LEE CO.**  
ABERDEEN, SO. DAK.

# YOUR BLOOD

## *can save him*



*We know that our wholesalers and their customers have supported all Red Cross war appeals. So we add our thanks — and say — keep it up. Remember, you can give a pint of your blood every two months.*

*Desperately, he now needs blood. It's his chance for life. The blood that flows so abundantly through your veins may be his one great hope. Give your blood—and do it now.*

Life flows back so miraculously when the blood plasma is administered. It's so little to

give—yet means so much to a man, grievously wounded.

We all want to help. This is a practical way. It's simple, easy, without fear. Give a pint of blood—*now*.

THE MANSFIELD TIRE & RUBBER CO. • MANSFIELD, OHIO

*Following Well Known Tires—*

# MANSFIELD, UNITED

WHOLESALE EXCLUSIVELY

## Ignition Systems

(Continued from Page 56)

ignition coil is what we use to build up the voltage for us."

"But how can it do that?" Tommy wanted to know. "The current in what you called the secondary winding can't be any stronger than the current in the primary winding."

"Well," answered Pop, pulling at the lobe of an ear, "'strong' ain't quite the right word. You see, there's two ways of measurin' electricity. One is by the amount, which we call 'amperage,' and the other is by the

pressure, which is known as 'voltage.'

"Somebody'll probably tell you that it's just like water flowin' through a pipe. They say that only a certain amount of water will pass through a pipe of a certain diameter in a given time, and they compare that to amperage. Then they say that the pressure behind the water can be compared to voltage. But I never could quite see it. When you increase the pressure of the water, it flows faster and you get more through the pipe. But, when you increase the voltage of electricity, you don't necessarily get any more current. The voltage in the high-tension circuit of

a car is 4,000 to 15,000, like I said but the amperage is only a fraction of what you get in the primary circuit."

Pop leaned back in his chair. "I guess that about answers your questions don't it?" he asked.

"Well," said Tommy, "almost. But there's one thing I still don't understand. I see how the current gets into the secondary circuit, but why does the voltage increase?"

"I can't tell you why, because nobody knows exactly. But I can tell you how. If we made the secondary windin' with exactly the same number of turns as the primary windin' and used exactly the same size of wire, the voltage would be about the same in both. But, if we use more turns in the secondary windin', the voltage is stepped up. And the more turns in the secondary windin', the higher the voltage."

Tommy stood up. "Thanks a lot," he said. "I guess I know enough about coils to keep Larry off my neck. But there's a lot more about electricity on a car I'd like to learn."

"Maybe nobody'll ever know all about electricity," said Pop. "But that ain't no reason why we all oughtn't to learn as much as we can. A mechanic who don't know electricity is like a painter who's only got wide brushes. When he gets in a tight place, he's stuck."

## Promotions for Two

E. P. Holder, president of the Wickwire Spencer Steel Co., has announced the promotion of R. T. Dunlap to the position of vice-president in charge of production. Also announced was the advance of A. G. Bussmann to the position of assistant to the president.

Dunlap was previously vice-president and general superintendent of the Buffalo district. Before joining Wickwire Spencer in 1943, he was general works manager of the Vulcan Iron Works at Wilkes-Barre, Pa.

Bussmann previously has been the assistant to the executive vice-president of Wickwire Spencer. He has been associated with the company since 1930.

## Regional Chiefs Picked

Stewart W. Munroe, general sales manager of the Chrysler Division, Chrysler Corp., announces the appointment of two new regional managers. Charles Pape, Jr., will head the Syracuse region, with headquarters in Syracuse, N. Y., succeeding Frank L. Henderson, resigned, and Arthur B. Heston will assume the same post at Omaha, Neb., where he takes the place of Walter P. Cayot, who has entered private business. Both Pape and Heston were serving as special field representatives of the Chrysler Division when selected for their present posts.

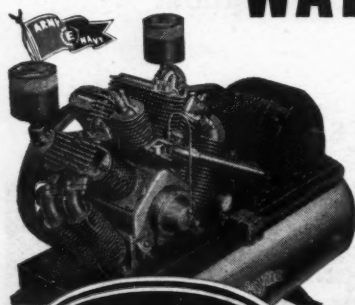


## WAYNE EQUIPMENT

*is standing the test!*

ALL over the country Wayne owners are pleased with the continued fine performance of Wayne Air Compressors and Computing Pumps. Wayne precision manufacture is demonstrating its importance more every day the war goes on. Wayne Service is available quickly everywhere.

THE WAYNE PUMP CO., FT. WAYNE 4, IND.



**Wayne**

**AIR COMPRESSORS**

# Alcoa Research

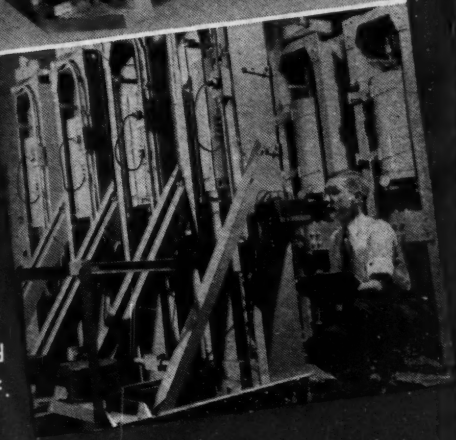
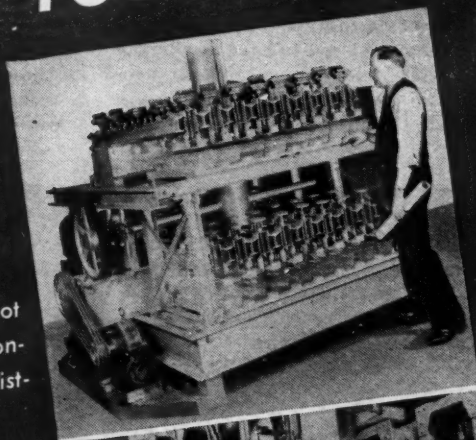
## MEANS THIS TO YOU

Alcoa Research pioneered the development of spectrographic analysis methods for the control of alloy uniformity.

Strength and lightness are not enough; Alcoa alloys are constantly tested for their resistance to corrosion.

This machine crowds a lifetime into a couple of days, testing such parts as pistons, connecting rods, cylinder heads, crankcases for aircraft engines.

Determining the behavior of aluminum products under load when heated up to 600°F.



Research carried on by the staff of Aluminum Company of America has won world recognition. Its effect is fundamental and far-reaching.

For example, the manufacturer who buys Alcoa Aluminum products, to include in the automotive parts or equipment he is making, buys more than aluminum castings, forgings, sheet or shapes. Alcoa research helps him determine what alloys will best enable him to meet such requirements as weight saving, corrosion resistance, strength and heat transfer.

In addition to the careful research done on alloys, Alcoa service goes further. The designs of parts to be made in Alcoa Aluminum are

checked for the best method of manufacture, most efficient use of aluminum, and highest possible service characteristics. Parts are produced under close laboratory control, by a manufacturing and research organization whose guiding principle is the constant improvement of Alcoa's output. The performance of each product, as it ultimately affects you, is thereby improved.

These services are hastening the winning of the war by aiding manufacturers of wartime products. They will have an important effect, too, on designers, builders and users of peacetime products. ALUMINUM COMPANY OF AMERICA, 2133 Gulf Building, Pittsburgh 19, Pennsylvania.

# ALCOA ALUMINUM



JULY, 1944

When writing to advertisers please mention Motor Age

## Post-War Markets

(Continued from Page 20)

Service volume will also increase in a comparable manner, as not all the 21,000,000 car owners will buy new vehicles in the immediate post-war period, but will content themselves with the old job. All the "A" car holders will find it necessary to get their cars overhauled, as the short trips they are forced to take accelerate ring and cylinder wear. In this connection, 75 per cent of the people are limited to the "A" rations.

Without the normal annual dilution resulting from the sale of new cars, service volume has increased rapidly since the war, even though only 25 per cent of the cars are used in what may be considered a normal manner.

An appreciation of the size of this service field can be obtained by studying the wholesale value of replacement parts that have been sold. In 1941 the wholesale value of replacement parts for civilian use was \$718,212,000. In 1942, under government curtailment, the volume was \$472 million. According to a survey made by the Motor and Equipment Manufacturers



"My wife has made some kind of a record. She's driven our car from the back seat for ten years, and has never had an accident."

# Quiet



## HOOVER

BALL AND BEARING COMPANY  
ANN ARBOR, MICHIGAN

BALLS - BALL BEARINGS - ROLLER BEARINGS

Association, sales by wholesalers in 1943 showed an increase of 14.2 per cent over the preceding year. Another survey, by the National Automobile Dealers Association, disclosed that parts sales of key dealers had increased approximately 26 per cent.

But these figures apply to the industry as a whole and, while of great general interest, the MOTOR AGE reader is more particularly interested in how he will fare during the post-war period and what will be his share of this enormous maintenance volume.

Obviously, the biggest factor in the individual and his shop. The alert businessman operating a well-equipped shop will undoubtedly get a greater share of the market than will the unskilled, careless proprietor of a dirty, poorly equipped shop. Another and extremely important consideration, when attempting to determine any individual's share of the post-war market, is the number of shops that will be competing.

In February 1944 there were 78,000 car dealer and independent repair shops that were maintaining about 29,960,000 cars and trucks. On December 1, 1941, there were 95,000 shops keeping 34 million cars and trucks in repair.

How many service shops will be opened after the coming peace is, of course, anyone's guess, but it seems a safe bet that the 95,000 shops that did business before the war will have some additional competition.

Much of this new competition will come from men now in the armed forces. Some of these were in the automotive business before the war and for them the details of operating a repair shop will be an old story. For many others, however, it will be a new experience. Included in this group are many who have learned automotive maintenance in the Army, the Navy and in the Air Forces. It should be pointed out that all these should be better than average mechanics as the result of their training.

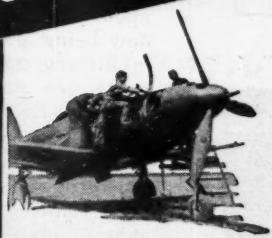
(Continued on Page 64)

# Around the Globe

Snap-on Tools — THE CHOICE OF BETTER MECHANICS



**Snap-on Tools**  
THE CHOICE OF BETTER MECHANICS



Thousands of American mechanics are G. I. Joes today . . . carrying America's service front right around the world. In arctic outpost or jungle flying field "Joe" is still the world's most capable, resourceful mechanic . . . and the finest, fastest tools add speed to his skilled hands. Wherever America works or fights, Snap-ons stand out as the choice of better mechanics!

SNAP-ON TOOLS CORPORATION, 8036-G 28th Avenue, Kenosha, Wis.

## Post-War Markets

(Continued from Page 62)

ing and the high standards that are required by the military forces.

To further aid such men who wish to start in business for themselves, the government is preparing a manual which is designed to teach the business fundamentals that the operator of an automotive service station should know in order to be successful in his chosen field. Naturally, the government does not advise any man to go in business and the difficulties

that will be encountered are emphasized in the manual.

However, with material of that sort available, it is to be expected that many men will make the most of the opportunity. So it can be expected that competition among shops for the service dollar will increase materially when the armed forces are demobilized.

As further evidence of this increase in competition, sales managers of the various car factories report that they are constantly receiving requests from both civilians and military men asking details of any franchise that may be available.

## Assembling Tractor

(Continued from Page 25)

and the flange used for the purpose of mounting the post to the frame. The wheel-hub brake-drum flange must be turned off in a lathe to provide a clearance for the wheels. A bushing must be fitted in the upper end of the axle tube to provide support for the axle shaft, which is used for the steering post.

The shaft, of course, must have a bearing surface machined on it where it passes through the bushing in the tube. The shaft must be cut off above the plate on the frame and provided with a tapered and threaded end to take a plate which also has a tapered hole and keyway to fit the shaft. The regular Chevrolet steering arm can then be bolted to the plate on the end of the shaft. The drag link can be cut and a piece welded into it to make it the correct length to fit between the steering gear and the steering arm. The wheel spindles and hubs may be taken from any independent front suspension system and mounted as shown. The brake drums must be turned off about  $\frac{3}{4}$  in. beyond the wheel-mounting lugs.

A hood should be provided from the radiator to the cowl. It can be formed from light-gage sheet metal. A seat obtained from a discarded piece of farm machinery would be ideal, as it is mounted on a spring steel bracket. A draw bar, with holes for attaching various pieces of machinery, is welded to the axle housing.

## Civilian Truck Output

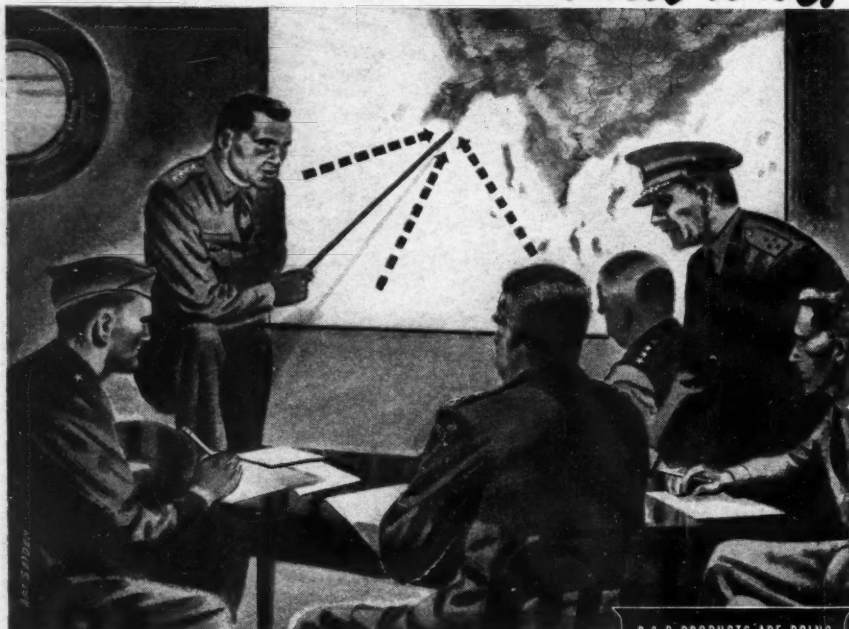
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iron castings are a bottleneck at present, and this shortage ties up production of axle housings, engine blocks, cylinder heads and certain other components. It is reported that a pinch in skilled help is chiefly responsible for conditions. The new committee, headed jointly by W. B. Murphy, WPB deputy vice chairman for production, and Vernon A. McGee, deputy executive director of the WMC, service as a clearing house for efforts to recruit needed manpower and to remove other production obstacles.

Middlekamp also was optimistic about replacement parts. More are now being produced than ever before in history, he said, although certain parts are not in production at the moment. Every effort is being made, he said, to procure more parts.

Although military fortune will have the ultimate say as to the amount of both vehicles and parts made available to civilians, the picture is distinctly more favorable than when first-quarter production figures were announced.

**concentrate on one... and win!**



America's leading mechanics are leaders because they learned long ago the secret of concentration on P & D's one complete quality line and its three big advantages.

They concentrate on the P & D high quality complete line of replacement ignition parts for trucks, buses and passenger cars because it means...

P & D PRODUCTS ARE DOING THEIR BIT WITH OUR ARMED FORCES IN VARIOUS THEATRES OF WAR

### 3 P & D BENEFITS

1. Minimum inventory, because one complete line.
2. The best is always at hand, because P & D make only one quality... the finest.
3. Customer satisfaction, because good work plus P & D parts means peak performance.



YOU CANNOT PURCHASE ANY FINER QUALITY

**P & D MANUFACTURING COMPANY, Inc.**

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STARTING · LIGHTING · IGNITION  
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P & D MANUFACTURES ONE COMPLETE QUALITY LINE. ONLY THE FINEST MATERIALS AND WORKMANSHIP OBTAINABLE ARE EMPLOYED

3614



**PATCHWORK PETE:**

I tell 'ya the reason it's so tough to get repair parts is on account of the manufacturers are so dang busy makin' those high priced aeroplane parts and gadgets they forget all about us guys that buy their stuff when there ain't no war goin' on.

**T. P. TIM:**

You've got it all wrong, Pete. Sure, the big job is to make the parts for the planes, jeeps, trucks, and tanks that have got to win the war for us. That's the way every right thinking man wants it. But they are making a lot of parts, too, for keeping the cars on the home front rolling. You forget cars all over the world are wearing out and more parts are needed than ever before.

**OVER 2,000,000 POUNDS OF  
T. P. REPLACEMENT PARTS  
ARE GOING TO THE REPAIR TRADES EVERY MONTH**

Yes, and we expect to get our output of replacement parts—valves, pistons, pump parts, and chassis parts up to over 2,500,000 pounds each month. And that's a lot of parts. *We are shipping more parts to our jobbers than ever before.* But the need is also greater than ever before. No new cars are being made to take the place of the over-age cars which normally would go to the scrap pile. Our country and the countries of our Allies must depend upon rebuilding, reconditioning, and repairing to keep cars in service.

The automotive replacement parts industry is doing a splendid job in producing great volumes of finely-finished precision parts for automotive maintenance. It is the duty of every automotive service man and mechanic to educate owners to conserve their cars by caring for them properly. The skill and ingenuity of mechanics can do wonders in coaxing longer service from worn engines and chassis. T. P. Jobbers' machine shops can rebore blocks, and recondition many other parts that ordinarily would go on the scrap pile, saving them for extra miles of wartime service. Working all together—we'll keep 'em rolling.

**Are You Making the Best Use of Your T. P. Jobber's Machine Shop?**



*See Your* **Thompson**  **Products** *Jobber*

CLEVELAND • DETROIT • LOS ANGELES

## Legally Speaking

A lawyer's interpretation of federal and local court decisions of interest to repairmen, presented each month

By C. R. ROSENBERG, JR.

### Is a Rented Building Safe?

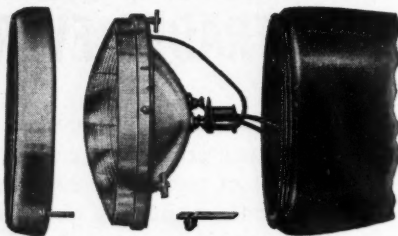
When a repairman is operating his business in a rented building, who is legally and financially responsible for any injury resulting from some defect in the building?

A business man is required to pro-

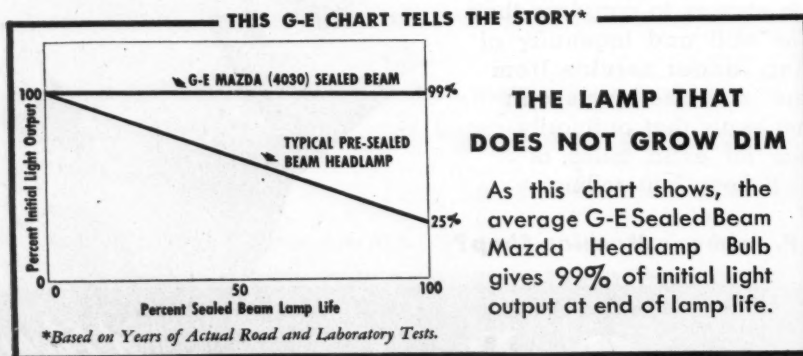
vide a safe place for employees to work. Moreover, he is responsible for any injury to customers or others resulting from any defect in his business building. Loose or broken floor boards or unsafe stairways are examples of "defects" that might cause injury to a customer or employee.



Today, more than ever, car, bus, and truck owners need the extra safety of modern, sealed-beam headlamps. Arrow complete Sealed-Beam Headlamp Units and Sealed-Beam Adapter Kits make this modern lighting available for practically any type of pre-1940 vehicle. The Adapter Kits fit right into the old lamp-housings on most models. The



complete Headlamp Units replace the old lamp-housings where kits are impractical. See your nearest Arrow jobber or write direct for complete information.



# ARROW

**SAFETY DEVICE CO.**  
MT. HOLLY, N. J.

If a repairman should be sued for injuries resulting from such a defect, may he in turn sue the owner of the building from whom he rented? A tenant in a building was hurt recently by a defectively hung window falling on his hand. He sued the owner of the building, and in the course of its decision the court pointed out the conditions affecting a landlord's liability in such a case.

In order to hold the landlord liable for such an injury, the defective condition which caused the hurt must have existed at the time the lease was entered into. The tenant must have been unaware of the dangerous condition and the risk involved in it. The dangerous condition must also be such that it could not be discovered by the tenant upon a reasonable inspection of the place.

"There is no implied warranty by the landlord that the building is safe," said the court, "but where the landlord has knowledge of defects which are hidden, it is his duty to reveal them."

Which suggests that the only practical protection for the repairman in a rented building is to make frequent and careful inspections for such defects and bring them to the attention of the landlord promptly upon discovery. (*Carusi vs. Schulmerick*, 98 Federal Reporter, second series, 605).

### Death of Partner

One of the disadvantages of the partnership form of doing business lies in the fact that, ordinarily, the death of one partner dissolves the partnership and the value of his interest must be paid over to the executor or administrator of his estate. If the surviving partner is unable to raise the money to buy out his deceased partner's interest from the estate, the partnership assets may be sold at a sacrifice sale and the business put out of existence.

With a view to avoiding such a result, two partners in New York included in their partnership agreement a provision to the effect that, in the event of the death of one partner, the surviving partner should become the sole owner of the partnership.

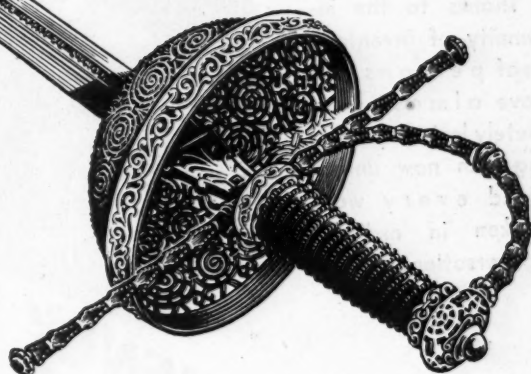
One partner died and the administrator of his estate brought legal action against the surviving partner to establish ownership of an interest in the partnership. The agreement was attacked as being legally invalid and particularly as being "without consideration." The argument was made that the surviving partner had not given any "consideration" for the ownership of the entire partnership business which he now claimed under the terms of the agreement.

"There are a number of cases," declared the New York court, "upholding the validity of a partnership agreement determining the methods

(Continued on Page 68)

# Sword

OF TOLEDO STEEL



## NONE FINER IN ALL THE WORLD

Back in the Middle Ages men lived and died by the sword. Men fought for love, liberty and happiness—and the winner in those days was apt to be the man with the finest sword—a sword with a blade of Toledo Steel.

For the purpose, no finer steel was ever made than that turned out in that ancient Spanish city. And, in those olden days, no cavalier who

valued his life dared carry a sword of lesser quality.

And so today a proud heritage is Toledo's—men who know motors specify Toledo Motor and Chassis parts. For almost half a century the name Toledo has been a symbol of the highest possible quality. In these days of conservation—it is wise to always insist on Toledo.

### The TOLEDO

STEEL PRODUCTS COMPANY • TOLEDO, OHIO, U.S.A.

SINCE 1906



*Makers of Fine Automotive and Aircraft Parts*

## Legally Speaking

(Continued from Page 66)

and terms of the disposition of the interest of the partners in the partnership upon the death of either. Partnership agreements which provide for the conduct of the business after the death of one or more of the partners, and for the disposition of the interest of partners in the partnership in such event, are frequent.

"In the present case there is no mention of any specific amount to be paid for the interest in the partner-

ship, and this raises the question of 'consideration.' Is there a lack of 'consideration' which destroys the validity of this particular part of the partnership agreement?

"It appears immaterial whether the transfer of the deceased partner's interest to the surviving partner embodies a money payment, a reciprocal arrangement, or a mere naked transfer by one to the other. The provision of the partnership agreement under discussion was not a mere gratuity which rested upon no consideration, but rather rested upon the same meritorious consideration that supported the other provisions of the partner-

ship agreement, which consisted of the mutual promises of the parties to become partners and to conduct the partnership business on the terms set forth in the partnership agreement."

Under this and similar decisions, two repairmen in partnership can provide in the partnership agreement that upon the death of one the survivor shall become the sole owner of the partnership without having to pay anything to the deceased partner's estate. It's like saying, "Last man takes everything." (*In re Karlinski's Estate*, 38 New York Supplement, second series, 297.)

Thanks to the ingenuity of inventors, deaf persons who have almost completely lost their hearing can now understand every word spoken in ordinary conversational tones.



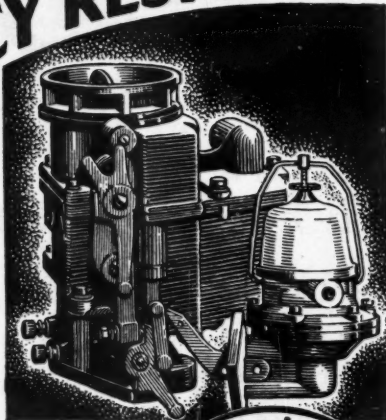
## LOST EFFICIENCY RESTORED

**N**O less remarkable than the restoration of "lost hearing efficiency" by modern science is Hygrade's method of restoring lost operating efficiency to broken down carburetors and fuel pumps.

**Hygrade Engineered Parts for Carburetors and Fuel Pumps Put up in Contain-All Kits**

Hygrade Replacement Parts—skillfully engineered for old units in which new tolerances have been created—are the repairman's assurance that every reconditioning job will measure up to 100% performance.

**HYGRADE PRODUCTS CO., INC.**  
35-35 Thirty-fifth St., Long Island City, N. Y.



**Hygrade Line**  
AUTOMOTIVE PRODUCTS

### HYGRADE PRODUCTS

Replacement Parts  
for  
Carburetors, Fuel Pumps  
and Shocks.  
Speedometer Shafting,  
Tips and Casing.  
Fuel Lines  
and Fittings.

REPLACEMENT PARTS  
by **HYGRADE**

**ENGINEERED**  
for  
**OLD UNITS**

## Customer's Help

Is it safe for a repairman to permit a customer or a customer's employees to assist in service work being done or in the delivery or other servicing of items which the customer buys?

In a recent case, a merchant sent his truck to deliver certain merchandise at his customer's place of business. There an employee of the customer assisted in the unloading of the goods. This had been a practice for a long time in connection with deliveries to this particular customer. On one occasion, however, the customer's employee stepped into a hole in the base or bottom of the truck and was injured. In his subsequent suit against the merchant, he claimed that the wood floor of the truck had become so worn and decayed as to be unsafe for use.

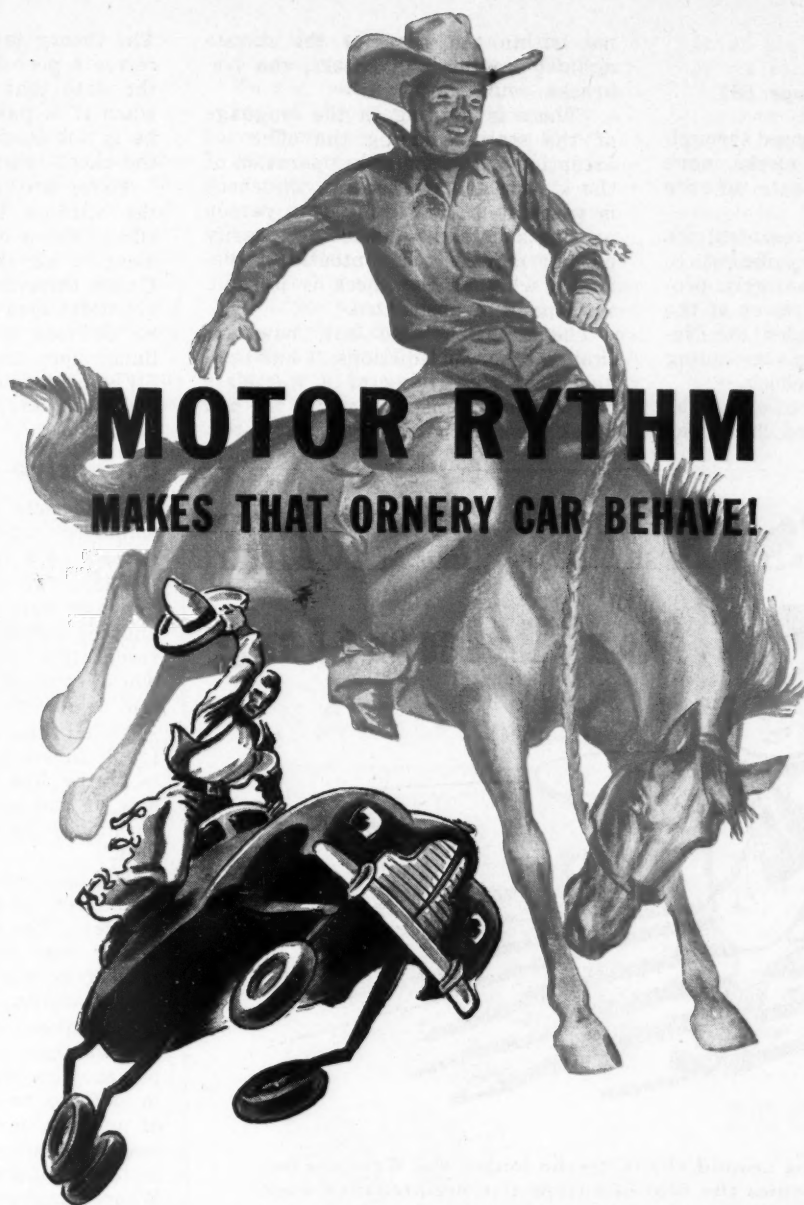
"The defendant was chargeable with knowledge," said the Missouri court, "that in order to make proper delivery of the goods, it would be necessary for the employees of the buyer to enter the truck and help carry out the goods. Knowing these facts it was the duty of the defendant to exercise ordinary care to keep his truck in a reasonably safe condition for the use of his customer's employees. The defendant held knowledge of the practice of the employees of his customer assisting the driver in unloading the truck. It was a custom of long standing in which the customer's employees and the driver of the truck had been unloading merchandise from the defendant's trucks."

Thus an employer must furnish safe facilities not only for his own employees, but for anyone else who is permitted to use those facilities. (*Reed vs. Swift*, 117 South Western Reporter, second series, 636).

## Bad Checks

A customer of a Nebraska business house gave a check for the goods which he purchased and took them away with him. The check was post-dated and was handed by the customer to a clerk without any statement about the date of the check.

(Continued on Page 70)



# MOTOR RYTHM

MAKES THAT ORNERY CAR BEHAVE!

Chemical engine-cleansing and carbon removal is the modern way to rid engines of power-wasting deposits of carbon, gum, sludge, and varnish.

MOTOR RYTHM is a liquid chemical compound developed in the famous Hollingshead laboratories. Added to gasoline and oil, it dissolves carbon binders; removes harmful engine deposits. It frees sticking valves and rings . . . stops bucking and ping due to carbon . . . guards against internal

rust and corrosion—used regularly it keeps them out!

A clean engine lasts longer; retains much of its original power and pep; cuts gasoline and repair bills! That's why MOTOR RYTHM is the fast-selling, repeat-sales item every motorist wants. Powerfully advertised. Complete, attractive displays and point-of-sales helps available. Order from your jobber today! R. M. Hollingshead Corporation, Camden, New Jersey; Toronto, Canada.

BUY MORE BONDS!

**Hollingshead**  
LEADER IN MAINTENANCE PRODUCTS



Other popular WHIZ reconditioning products: VENUS POLISH • INSTANT SEALER • RADIATOR CLEANER • COMMANDO RUST PREVENTIVE • BRAKE FLUID • HO-ZOF DEGREASER



When writing to advertisers please mention Motor Age

## Legally Speaking

(Continued from Page 68)

Subsequently the check passed through the hands of two other clerks, none of whom noticed the date of the check.

When the check was presented, the funds in bank were insufficient to pay it, and it was accordingly protested. Thereafter, the drawer of the check was prosecuted under the Nebraska statute prohibiting the issuing of an insufficient-funds check.

In overruling the contention of the accused that the post-dated check was

not within the scope of the statute against issuing bad checks, the Nebraska court said:

"There is nothing in the language of the statute having the effect of excepting a case from the operation of the statute merely because the check is post-dated. The guilt of a person passing such a check must necessarily be determined by his intention to defraud, whether the check is payable on demand or post-dated."

The court pointed out, however, that in other jurisdictions, it has been held that the giving of a worthless check is not punishable under the bad check laws if the check is post-dated.

The theory is that a person who receives a post-dated check knows from the date that the check is not good when it is passed to him. Therefore, he is not deceived into believing that the check is good when he gets it.

There are also some cases under the various bad-check acts to the effect that a bad check given in payment of an old debt is not a fraud. Under these decisions, a repairman is not defrauded by a bad check unless he delivers goods or service in reliance upon the validity of the check. (*White vs. State*, 280 North Western Reporter, 433).

## Expensive Language

Slanderous words uttered by an employee may cause his employer money, as a recent Ohio case shows.

There two employees of a certain company were negotiating a deal with another company. Referring to a representative of the other company whose conduct dissatisfied them, they said to officers of the other company:

"What has become of the checks? I will throw him in jail. You ought to throw him in jail. I do not see how he can go to Florida unless it is on money he took from your business."

The man referred to sued these two employees and their employer for slander. The court held that the employer was equally liable with the employees who had uttered the slanderous words.

"The question here," said the court, "is whether the employer and employee who enter into a conspiracy to defame or slander the character of another, may both be sued if the employee commits an act of slander in the furtherance of the conspiracy. Where employer and employee enter into a conspiracy to slander another, and the employee commits an act of slander in furtherance of the conspiracy, the employer is jointly liable with the employee on the theory that they are joint wrongdoers."

Another argument in favor of the advisability of instructing employees not to get into controversies with customers or others! An employer may have to pay for by dollars the harsh language that an employee speaks by words. (*Schoedler vs. Motometer*, 15 North Eastern Reporter, second series, 958).

## Warranty to Repair

A written contract for the sale of certain equipment contained the following:

"The said equipment is sold with the following warranty and no other: The seller warrants that he will repair or furnish without charge a similar part to replace any material in the equipment which within one year after the date of the sale is

(Continued on Page 73)

# NOW'S THE TIME for Planting



**T**HERE'S no getting around the fact—the longer the War goes on, the more fertile becomes the field of automotive maintenance work which must be done to keep America's cars on the road.

Every appearance reconditioning, painting or body repair job you turn out today carries with it a certain potential of future business. Every seed of customer satisfaction correctly cultivated is bound to produce greater returns for you. Wise collision shop and service department operators guarantee this potential of future business with good workmanship and highest quality materials.

Their choice of materials is invariably McAleer—and there's a reason. We call it *quality-control*, rigid adherence to manufacturing standards which for 20 years have been responsible for nation-wide acceptance among service operators who are in business to stay in business. In body repainting and maintenance work, top money-makers in the shop have always been McAleer's *SPEEDIE-RUB*, the two-way *POLISH* and *CLEANER* and *QUICKWAX*.

Use these job-tested, *quality-controlled* automotive finishing materials. Your customer's car will receive the protective benefits which maintain the high dollar value of his car—you'll receive customer good will, increased business and extra profits.

Start planting seeds of customer cultivation with one or all three of these products. They can be the *extra profit makers* *TODAY* and the *postwar business builders* *TOMORROW*. Order from your local Jobber—or write us direct.

**McAleer** **MANUFACTURING CO.**  
*Quality-Controlled Finishing Materials*  
ROCHESTER, MICHIGAN

## Legally Speaking

(Continued from Page 70)

proved to the satisfaction of the seller to have been defective at the time it was sold. This warranty to repair is the only warranty, either express, implied or statutory, upon which the buyer purchases the said equipment. All other damages and warranties are expressly waived by the buyer."

At a subsequent suit for the purchase price, the buyer complained that the equipment was wholly worthless and unfit for the purpose for which intended. Sometimes in such a sale, without any specific statement, there is said to be an "implied" warranty or guarantee that the article sold is fit for the purpose for which the buyer wants it.

Pointing out that such implied warranties of fitness were excluded under the terms of the written contract, however, the Supreme Court of Kansas said:

"In the contract it was categorically stated that the only warranty to which the seller was bound was the express one to repair or replace free of cost any parts proved to the satisfaction of the seller to have been defective at the time it was sold. The written terms of the contract of purchase expressly exclude any and all implied warranties."

An agreement for the sale of equipment or merchandise which excludes "all other warranties" means that the only redress which the buyer has for defects is that specifically given him by the terms of the contract.

Hence the advisability of reading written contracts and orders for the purchase of goods closely to make sure just what the seller is warranting or guaranteeing. (*Harmon vs. Coonrod*, 79 Pacific Reporter, second series, 831).

## "Stolen" Employee

When a business man "steals" an employee from a competitor, he is apt to let himself in for trouble and financial loss.

An employee of a Massachusetts concern signed a written agreement at the time he was employed providing that "upon the termination of his employment he shall not, for a period of five years thereafter, directly or indirectly engage in the same or a similar business. He shall not solicit, serve or cater to, or engage, assist, be interested in or connected with any other person, firm, corporation or business soliciting, serving or catering to any of the customers known by him to be customers of the said employer."

After being employed for several years, the employee was dismissed,

and thereafter he was hired by a competitor of his former employer. He did not solicit business from his former employer's customers, but his new employer did. The employee had been very popular with his former employer's customers, many of whom were his personal friends, and, when they learned of his new connection, they promptly transferred their business to his new employer. His former employer brought suit against his new employer and showed that the new employer knew of the employee's agreement not to engage in the same business, but nevertheless continued to employ him and to receive the bene-

fit of his popularity at the expense of his former employer.

The court, apparently believing that the new employer knowingly was a party to the employee's violation of his agreement, said:

"We see no reason why the new employer should not pay damages, which have been assessed at \$500." At the trial of the case, it appeared that the employment of the man had ended, but the \$500 verdict represented damage which the court thought had already been done to the man's former employer. (*Suburban vs. Le Blanc*, 15 North Eastern Reporter, second series, 828).

# Sell ZECOL

## NATIONALLY ADVERTISED



ZECOL advertising is appearing in the AMERICAN WEEKLY, read by more than Fifteen Million men and women.

ZECOL advertising in COLLIER'S WEEKLY, with more than Eight Million readers per issue is also telling car owners how they can keep their cars looking new, quickly and easily, with ZECOL WAX and ZECOL SCUM REMOVER.

The "Quick and Easy ZECOL Way" is a mighty profitable repeat line to get back of, Mr. Dealer. Your jobber can supply you.

### ZECOL, Inc.

Sole Manufacturers  
MILWAUKEE 1, WIS.



# The Quick and Easy ZECOL Way

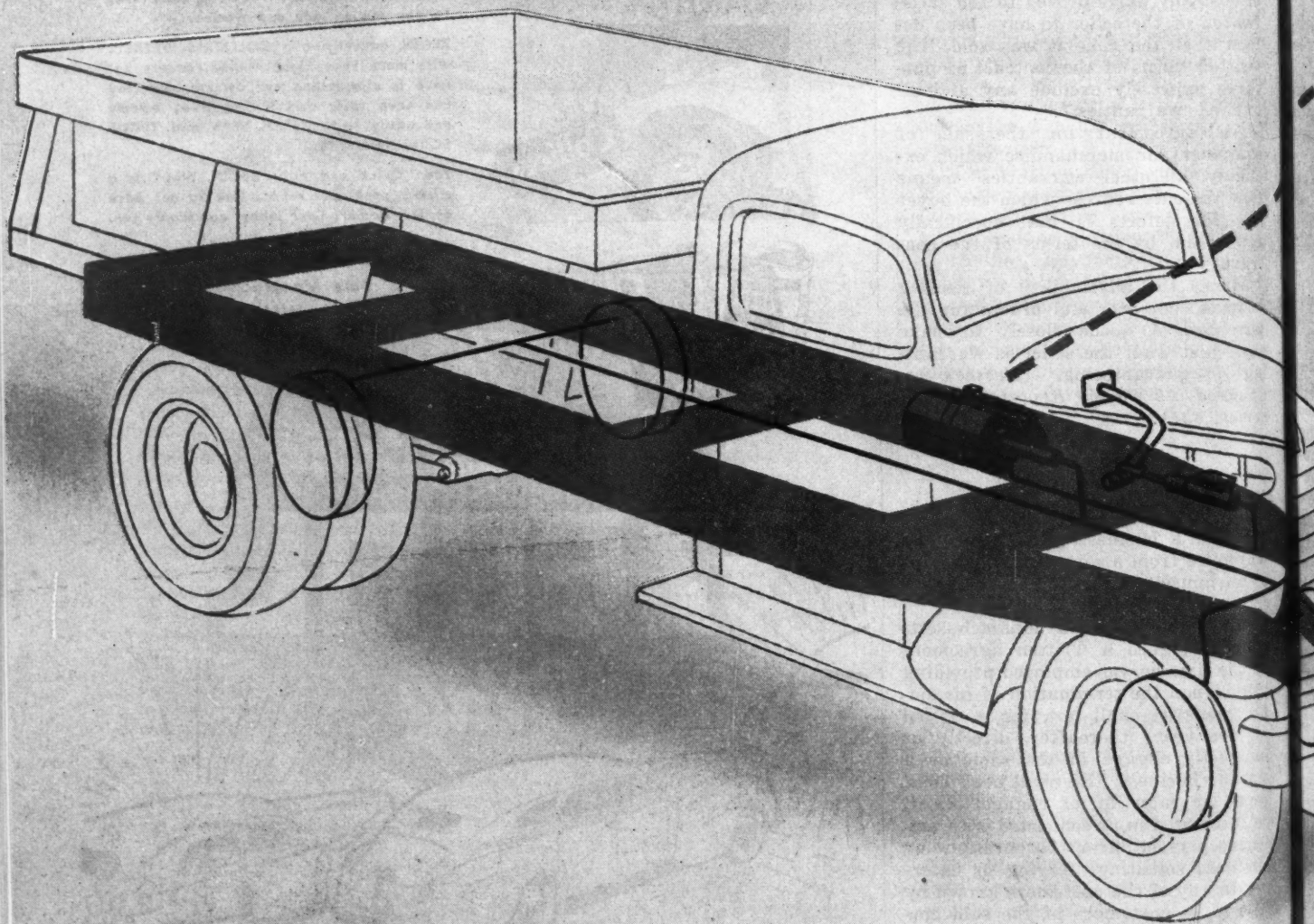


POSTWAR BRAKING NOW FOR

# *Hydrovac*

*POWER BRAKING BY*

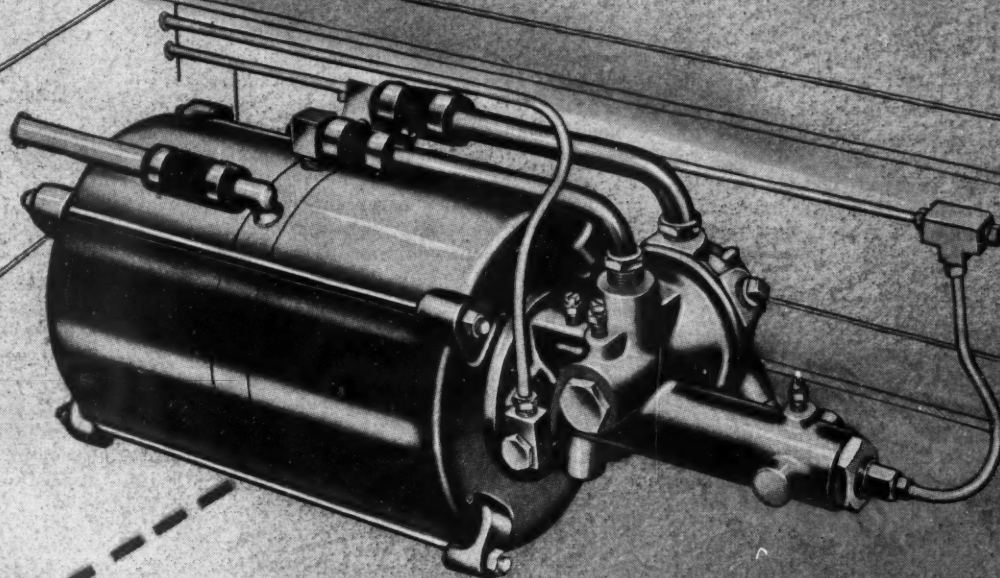
# *Bendix*



BENDIX PRODUCTS DIVISION

SOUTH BEND, INDIANA

# OR TODAY'S ESSENTIAL HAULING



## Available for war essential trucks, tractors and buses

Here is a power braking unit with outstanding simplicity and dependability. Here is a power braking unit proved for safety and efficiency in millions of miles of military service. Here, in short, is the kind of unit you've looked forward to getting after the war. *And qualified wartime users can have it right now.*

Hydrovac is compact, completely enclosed, with no external levers or links. *It's simple to install*—you can mount it anywhere on the chassis with only three tubing connections. *And servicing is unbelievably simple*—there is nothing to adjust, either at installation or in service, and it is fully sealed against dirt and water.

Instantaneous brake action is accurately graduated in response to the exact degree of pedal operation by the driver.

A normal "feel" or reaction on the brake pedal allows the driver to sense the exact degree of brake application or release.

Provisions for trailer connections allow fast, accurately graduated control of trailer brakes.

*See Your Bendix B-K Dealer or Write the Factory Direct*

**BENDIX AVIATION CORPORATION**

BENDIX, INDIANA

"HYDROVAC" AND "BENDIX" ARE TRADE-MARKS OF BENDIX AVIATION CORPORATION

## Truck Super Service

(Continued from Page 31)

pairs. We are several miles from the nearest parts house.

"Highway travelers and others call us a mechanical oasis. They often tell us they have searched high and low for a certain part or have tried to get other shops to do a certain job and failed. We don't have any secret, except that we do use farmers on a part-time basis as mechanics' helpers and we keep a large stock of parts to draw from. We have al-

ways specialized in quick services—those which will get a man going if he's in trouble—but we also handle motor overhauls. Incidentally, there's a lot more of that work today. The average car on the road is four or five years old.

"Really, the war has put quite a responsibility on independent shop owners. It used to be that owners traded in their cars by the time they needed major overhauls. Now they bring them to us for reconditioning. I think we will be able to retain some of this work after the war. If we're on our toes, we ought to be able to keep our volume of the quick

services usually associated with the super-service station."

"Who knows?" asked Bentley. "I may be servicing airplanes on one side of my shop and automobiles on the other?" He has enough room to do it.

## Electronic Tire Repairs

(Continued from Page 23)

newly applied material during the actual curing by present-day equipment.

Tire repairs made by this electronic method were declared to be entirely satisfactory by the Automotive Section, Ordnance Research Center, Aberdeen Proving Ground.

The Automotive Section further stated that "the economy of time is in addition to the economy of weight and space," according to Colonel Vogt.

## Opens New Office

Walter Kidde & Co., Belleville, N. J., has announced the opening of a new sales and engineering office at 9507 Santa Monica Blvd., Beverly Hills, Cal. John M. Noble, who for the last four years has been manager of the Aviation Department at Kidde, has been appointed district manager in charge of the new West Coast office.

Noble was formerly manager of the Flight Instruments Department and assistant to the manager of the Field division of Bendix Aviation Corp., Baltimore, Md.

## Picks Export Agents

After manufacturing a line of tire and tube-repair materials since 1922 for exclusive sale in the United States, the H. B. Egan Manufacturing Co., Muskogee, Okla., last month announced the appointment of a Canadian national distributor and a New York export office for Latin-American trade. George M. Watson & Co., Ltd., of Toronto, and S. C. Prado, of New York, are the two companies named.

According to H. B. Egan, president of the company, this is a part of the post-war sales plans which have been under way since early in the year and additional export business will be developed later.

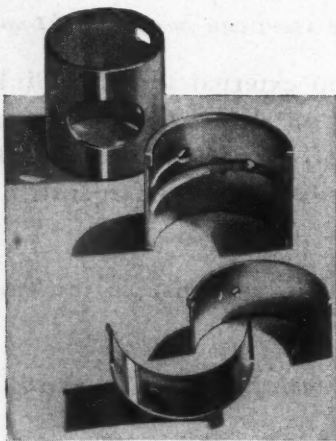
## Takes Charge of Zone

B. D. Berk has been appointed zone manager for the Lynch Manufacturing Corp., covering eight Midwestern states with headquarters in Chicago.

Berk joins Lynch after 18 years of successful experience in specialty distribution through automotive and specialty jobbers.



## Here are the Bearings *you couldn't buy*



**BONDS are still  
a good BUY**

The Water "Buffalos" . . . built by the Food Machinery Corporation . . . are one good reason why Tojo is going down—fast. They are also one good reason why you cannot get as many Johnson Bronze SLEEVE TYPE Bearings as you need. When the fighting job is done you will be able to buy all you want. And the improved quality will still make Johnson Bearings your best investment.

In the meantime you can serve your trade and your country by urging conservation of present equipment. A little extra care and attention will prevent breakdowns. Caution your trade to watch their oil . . . to keep it up to requirements . . . to keep it clean and free from impurities. Remember . . . VICTORY carries its own priority.

**JOHNSON**  
SLEEVE BEARING  
455 S. MILL STREET



**BRONZE**  
HEADQUARTERS  
NEW CASTLE, PA.

# Wagner CoMaX

## DRILLED SETS

*save labor... save drills*



### WAGNER

Automotive Products Include:

**LOCKHEED  
HYDRAULIC BRAKE FLUID**

**LOCKHEED  
HYDRAULIC BRAKE PARTS**

**CoMaX  
BRAKE LINING**

**WAGNER  
AIR BRAKES**

**TACHOGRAPH  
(Recording Speedometer)**

You'll like the way you can *save labor*, save the wear and tear on drills, and can *save time* by using drilled sets of Wagner CoMaX Brake Lining. . . . Yes, and you'll like the good coverage of this popular, proven line of quality lining.

CoMaX is the finest in molded brake lining. It is unsurpassed for quick, safe, smooth stops.

CoMaX is *long-lived*. This means thousands of extra miles before replacement is necessary—and less frequent replacements mean more lining immediately available for war needs.

CoMaX has reinforced backing which permits deep seating of rivets, and extends the period of safe usefulness.

Then, too, CoMaX is non-compressible, uniform in texture, easy on drums, and is age-proof. . . . Available in rolls, sets, blocks and slabs. . . . For details, consult your nearest Wagner jobber, or write us.

B44-7



**FOR VICTORY  
BUY U. S. WAR BONDS AND STAMPS**

## Wagner Electric Corporation

ESTABLISHED 1891

6498 Plymouth Avenue, St. Louis 14, Mo., U. S. A.  
**AUTOMOTIVE AND ELECTRICAL PRODUCTS**

When writing to advertisers please mention Motor Age

77

## Hupp Acquires Globe

Hupp Motor Car Corp. has entered into an agreement to acquire as of June 30 the assets and business of the Globe Machine & Stamping Co., Cleveland. R. S. Geddes, president of Globe, will become president of Hupp when the transaction is completed. The agreement was announced by Col. Willard F. Rockwell, board chairman of Hupp.

Globe Machine & Stamping Co., founded in 1902, has been producing ordnance materiel from the government. In peacetime it serves the automotive, refrigeration, and air-condi-

tioning industries, both through development of its own products and on a subcontracting basis. Hupp is now making brakes, clutches and other automotive and engine parts in war production.

Globe officials will acquire a substantial stock interest in the combined companies. Besides his presidency of Globe, Geddes also is president of the Warren Refining & Chemical Co., Cleveland, and the Star Drilling Machine Co., Akron, as well as a senior member of R. S. Geddes & Associates, management consultants. He was once vice president of the Peerless Motor Car Co.

## Appointed Ad Chief

Herbert King, vice president in charge of sales, National Battery Co., has announced the appointment of L. G. Gilmore as advertising manager, succeeding Kenneth Dawkins, now a Navy ensign stationed at Washington, D. C.



L. G. Gilmore

A Princeton alumnus, Gilmore was connected with the General Electric Co. for 14 years in advertising, business training, commercial research, and sales assignments.

In his present capacity, Gilmore directs all automotive and industrial advertising for the National Battery Co. and its Gould Commercial Division, located at Depew, N. Y. His headquarters are at the company's general offices in St. Paul, Minn.



## HOW TO TURN OUT MORE TUNE-UP JOBS

WITH 200,000 cars becoming unfit for service every month, it's more important than ever to stress regular, complete tune-ups. These should include servicing of the carburetor, ignition and lubrication systems, compression elements and the cooling system.

The secret of turning out more and better tune-up jobs is to attend to the cooling system first. This corrects troubles which otherwise might be falsely blamed on other motor functions.

WARNER RADIATOR CLEANER

makes it easy to service clogged cooling systems. It quickly and safely removes rust, scale and oil-muck... restores the cooling system to free-flowing efficiency.

After cleaning, it is wise to add WARNER COOLING SYSTEM PROTECTOR. This prevents further rust and scale... protects the metals from the harmful chemical action of the water. With these two WARNER COOLING SYSTEM COMPOUNDS many of the most common causes of motor ailments can be eliminated.

WARNER-PATTERSON COMPANY  
920 S. MICHIGAN AVENUE, CHICAGO 5, ILL.

WARNER SERVICE CLEANER  
... extra strength for trucks  
... heavy motors or badly  
neglected cars. Fast, non-  
poisonous.  
WARNER LIQUID SOLDER  
Repairs leaks in any part  
of cooling system quickly,  
permanently without me-  
chanical aid.



# WARNER

COOLING SYSTEM

## COMPOUNDS

STANDARD OF PROTECTION

If wartime demand makes it impossible to provide you with all WARNER COOLING SYSTEM COMPOUNDS you need, please be patient.

Copyright 1944, Warner-Patterson Co.

## Olds Honored at 80

Calling attention to the contributions of automobile pioneers in the designing and making of motor cars, Alfred Reeves, advisory vice-president, Automobile Manufacturers' Association, before the Lansing Rotary Club luncheon June 2 in honor of the 80th birthday of R. E. Olds, named him as "The Father of Mass Production in the Motor Industry."

The statement stems from the fact that in 1904 his Oldsmobile company produced on the progressive assembly system 5000 of the 22,000 cars made during that year.

Among those who extended a birthday salute to Olds was a pioneer older than he—Charles W. Nash, chairman of the board of Nash-Kelvinator Corp. Nash passed his eightieth birthday last January.

Among other old-timers at the party were A. B. C. Hardy, of Flint, an associate of Olds in the formative days of the automobile business, and Fred Aldrich, also of Flint.

Official greetings were given by Gov. Kelly and Mayor R. W. Crego, of Lansing.

## "Wild Bill" Endicott

Willard Nelson Endicott, who was once a prominent figure in automobile racing and later as a race promoter, died July 7 at Indianapolis. He was 68.

Endicott, known as "Wild Bill" to friends and acquaintances, finished fifth in the 1912 classic on the Indianapolis track. He was better known to Detroit race followers for his driving at the State Fair Grounds, where he raced against both competition and the clock.



**DISTINCTIVE!**



*Distinctive in color* and in quality! That means every re-wire job done with Wiry Joe's new maroon ignition cable looks better—and is better!

Insulation having outstanding dielectric properties reflects real advances by Wiry Joe in the compounding of synthetic rubber. And Wiry Joe braids are made of soft, combed, or super-carded yarns of first quality—coated as many as twenty-four times with a special lacquer. This means an outer covering that assures maximum protection for the insulation—a covering that is highly resistant to heat, cold, gasoline, oil, grease, moisture, salt air.

Ask your jobber about Wiry Joe's maroon primary and high tension cable—it's the answer to many ignition problems. Look for the announcement of other Wiry Joe innovations soon!

*Wiry Joe*

**AUTOMOTIVE CABLE**

manufactured by  
**THE CRESCENT COMPANY, Inc.**  
Pawtucket, Rhode Island

✓ *Check the wire on every job!*

## Priority Referral Plan Increases Difficulty of Hiring New Mechanics

Under the new War Manpower Commission priority referral plan for all male labor, effective July 1, the average repair-shop owner will find it increasingly difficult to recruit new male help, particularly if he is located in a critical labor area. The plan applies to male labor throughout the country, in both critical and non-critical areas.

All hiring will have to be done through local United States Employ-

ment Service offices. Specific details of the plan will be worked out on a local basis.

In critical labor areas, manpower priority committees will determine labor priorities and set employment ceilings. If the ceilings are not reached, repairmen will have little opportunity to get new help.

If a mechanic wants to change his job, he must first make contact with his prospective employer; the new em-

ployer in turn must prove to the local USES office a greater need for the man than his present employer. Then a referral slip will be issued. The employee must also have a certificate of availability from his old employer or from USES.

The repair-shop owner who needs help will register with USES and, if he is located in a non-critical area, it is possible that some help will be referred to him.

Employers will have a wide latitude of selection in accepting men sent to them by USES and will not have to accept the first one sent if he doesn't fill the bill. Conversely, if a man is referred to a repair shop and doesn't like the job offered, there is no compulsion used to make him take the job.

An important point in this system is the fact that it does not apply to female labor.

A new prospective employee must possess not only a certificate of availability, as has been the case in the past, but also a priority referral certificate issued by USES or in accordance with arrangements approved by USES, before he can be hired. "Arrangements" include placements through union hiring halls, by colleges and universities, and other normal employment channels approved by WMC.

Employers and employees will be restricted as little as possible, Paul V. McNutt, WMC chairman, declared in announcing the plan.

A man will be referred to other than an essential job only if:

1. He is not needed for any essential job in the area.
2. He is unable to accept an essential job outside the area.
3. He cannot take the job without undue hardship or unless special emergency circumstances or other good cause would prevent his acceptance.

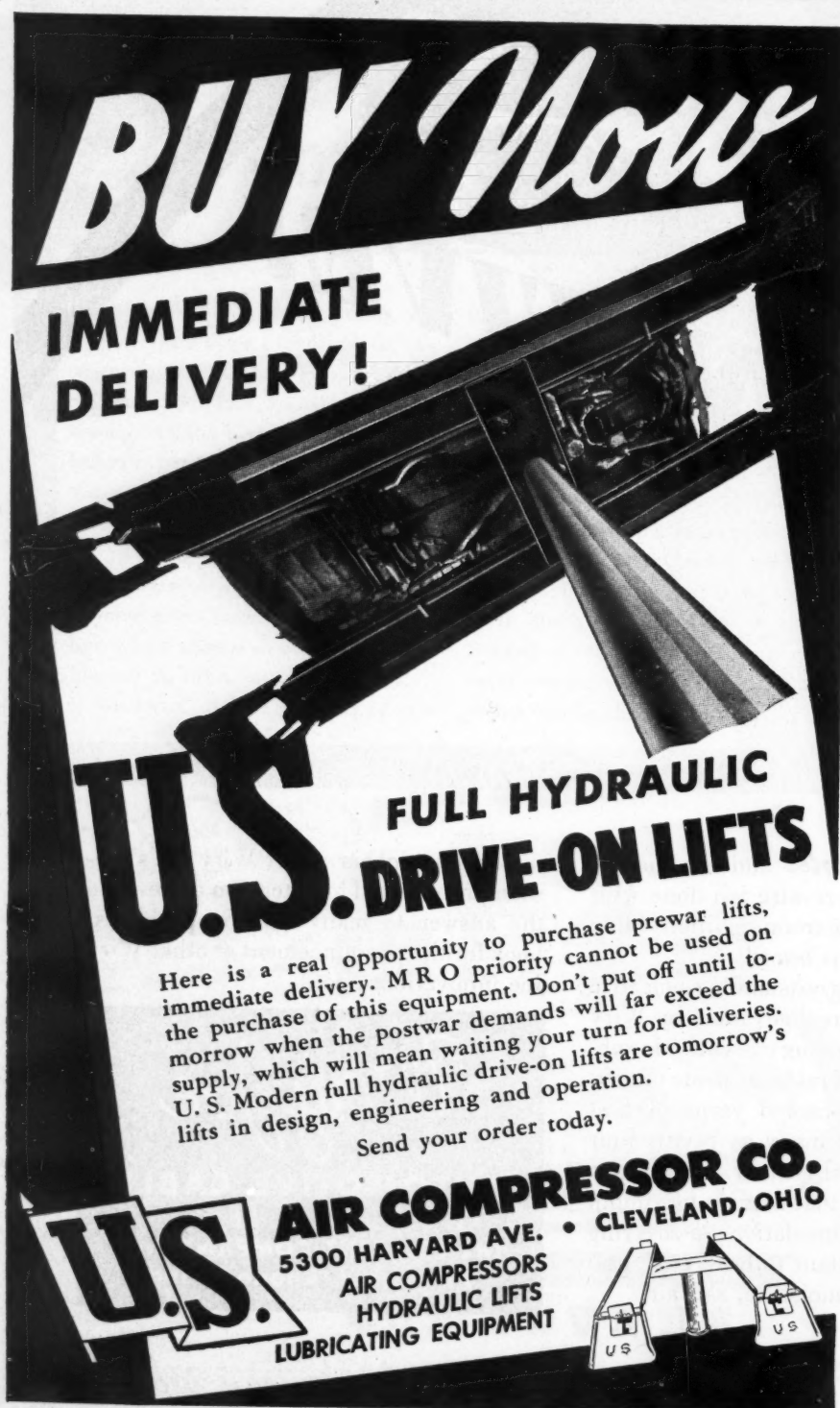
It will be a little easier to hire discharged war veterans. Under a recent WMC ruling a veteran is given 60 days after the effective date of his discharge to take any job he wants, even if it is in a non-essential industry. After that he will be referred to a job through the channels indicated by WMC.

In principle, part-time workers also come under the new plan, but local arrangements will be worked out to handle that situation. Ordinarily the very nature of this work makes it impractical to place the same restrictions on the choice of part-time jobs as are placed on full-time workers.

If an employee feels that he has been injured by the operation of the system, he has the right to appeal, but only to the WMC. Employers have the same right to appeal.

There are penalties, both direct and indirect, for unauthorized hiring, but WMC believes the self-interests of management will be sufficient to make

(Continued on page 82)



**BUY Now**

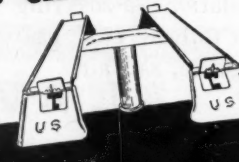
**IMMEDIATE DELIVERY!**

**U.S. FULL HYDRAULIC DRIVE-ON LIFTS**

Here is a real opportunity to purchase prewar lifts, immediate delivery. MRO priority cannot be used on the purchase of this equipment. Don't put off until tomorrow when the postwar demands will far exceed the supply, which will mean waiting your turn for deliveries. U. S. Modern full hydraulic drive-on lifts are tomorrow's lifts in design, engineering and operation.

Send your order today.

**U.S. AIR COMPRESSOR CO.**  
5300 HARVARD AVE. • CLEVELAND, OHIO  
AIR COMPRESSORS  
HYDRAULIC LIFTS  
LUBRICATING EQUIPMENT



# "DO YOU KNOW A RETURNED WAR VETERAN WHO NEEDS A 'BREAK'?"

ASKS *Bob Bowes*



## HERE IS A PLAN . . .

### The **BOWES PLAN** to Help That Man Back to a Business of His Own

• We here at Bowes "Seal Fast" have given a lot of thought to the problem of helping returned service men . . . so we have developed a plan. Here it is:

At our expense, we will train a selected group of ex-service men in the business of selling and distributing our products. When the training is completed, we'll furnish working capital, suitable sales equipment to each man selected . . . everything necessary to start his own business as a Bowes "Seal Fast" Distributor. The men selected will make Big Money . . . yes, but we want Big Men . . . men who will fight as hard to do a big job for themselves in Free Enterprise as they are fighting now to win the war.

Do you know such a man? If you do, now or later, just tell us who he is and send us your reason for thinking so.



### YOU CAN HELP, TOO!

No matter what business you're in, you owe a bigger debt to every service man than you can ever pay. It's up to you to figure out some plan, some way to give the ex-service man the chance to live the life he has tried to preserve. You may be the owner of one service station or a chain of them . . . but, Brother, you can help and *we can show you how*. Write us and *we'll tell you how you can help*. Let's start a drive now for Free Enterprise and the freedom for each returned war veteran to earn his own way. Do you want to wait until the Government starts another WPA? Do you want another Bonus March? Well, let's all start right now and plan, each man for himself, some way to make Free Enterprise work.

• LET'S GO, FREE ENTERPRISE!

## BOWES



*Dependable*  
**TIRE SAVING SYSTEM**

BOWES "SEAL FAST" CORPORATION • INDIANAPOLIS

## Willys Signs Sorenson; To Be Named President

Charles E. Sorensen, who built an international reputation as executive vice president and general manager for many years of the Ford Motor Co., has entered into a contract as chief executive officer of Willys-Overland Motors, Inc., and is to be elected president of this company.

The move was announced by Ward M. Canaday, eight years chairman of the board of the Willys company, who several months ago accepted the presidency of his company with the stated

intention of selecting as soon as possible for the job a man of outstanding automotive manufacturing experience.

Sorensen is generally regarded as the originator of the automotive assembly line, having developed Ford production to a rate of more than 8,000 units daily. His experience has covered virtually every phase of motor-vehicle production and merchandising both in this country and in foreign countries where American cars are assembled and sold.

He will take over active direction of Willys-Overland operations at a time when the company under Cana-

day's guidance has shown an increase in business of 31 per cent over the comparable six months' period for the previous year and developed half-year earnings recently announced of \$1,558,368.98, after reserves of \$3,098,862.00. During this period, back dividends of \$3.60 per share were paid on the preferred stock which was called for redemption in the amount of \$1,393,426.

In a statement, Sorensen said: "Willys-Overland has a sound manufacturing program. Their product is qualified to fit into the world market. The company offers a great opportunity for young men."

## Calls Preferred Stock

Directors of Willys-Overland Motors, Inc., at a meeting May 26 declared a dividend of \$3.60 a share on the preferred stock to clear up accumulated dividends through March 31. The dividend was payable June 10 to stockholders of record June 6.

The directors also voted to redeem preferred stock in accordance with the mandatory provisions of the certificate of incorporation on Aug. 1 at \$10.50 per share plus accrued dividends of that date. The requirements of the redemption provision amount to \$1,393,426.76.

There are outstanding 149,278 shares of preferred stock unredeemed as of May 26. The shares to be redeemed will be selected by lot.

## 35 Join MEWA

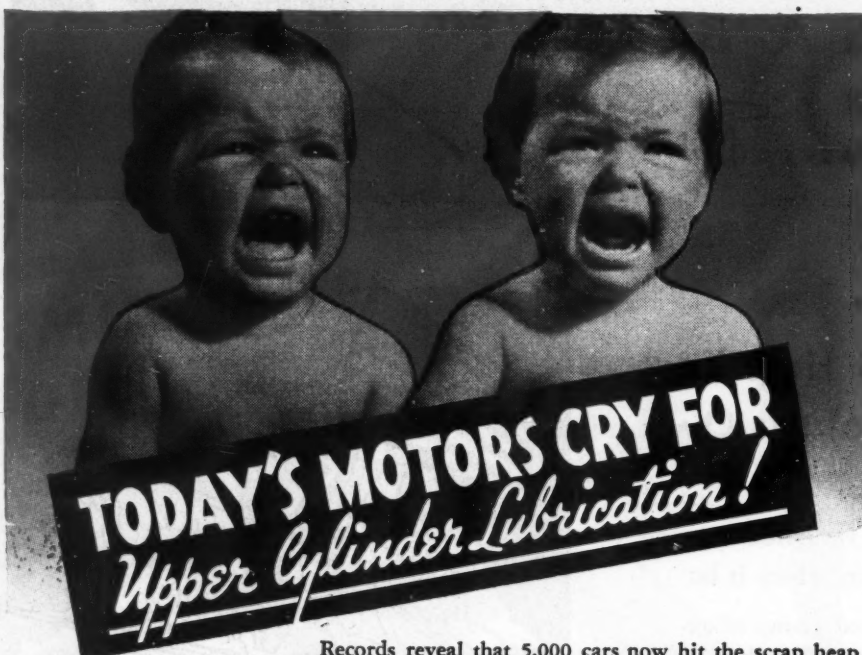
A total of 35 new members were admitted to membership in Motor and Equipment Wholesalers Association at the board of directors' meeting held during the association's Regional Industry Conference at Chicago, according to announcement just received from MEWA national headquarters. Applications from several others received too late for action at that time are now pending.

Announcing these additions, the association states it brings the total of new members admitted thus far during 1944 up to 61 which results in the association's membership being at the highest point in all its history.

## Priority Referral Plan

(Continued from Page 80)

the plan effective. WMC, in a rather vague statement, says authority for penalties can be found in the act giving the President extraordinary wartime powers and in certain other legislation. Among the indirect penalties or sanctions, is one that makes it possible for WMC to give a statement of availability to any employee. WMC could also stop referring any worker to an employer who refuses to operate.



Records reveal that 5,000 cars now hit the scrap heap every day . . . when these motors fold up, America's vital wartime transportation suffers. One big answer to keeping aging motors young and healthy is upper cylinder lubrication! These critical, high heat engine areas are especially vulnerable . . . when lubrication fails here, motor troubles really start.

Marvel Mystery Oil has a fine record of success in heading off these failures. For in these high heat combustion areas where ordinary lubricants fold up, Marvel Mystery Oil sustains its remarkable efficiency—it reinforces lubrication. Moreover, it retards the formation of gums and varnish in the engine and allows rings and valves to function smoothly . . . oil lines and pump screens benefit by its gum solvent ability.

Are you meeting the active demand among all your customers for this famous oil and fuel additive? Have it ready as a plus profit on every gas and oil sale and to assist you in motor tune up services. The Emerol Manufacturing Co., Inc., 242 W. 69th Street, New York 23, N. Y.



# MARVEL MYSTERY OIL



*Twenty Million Stop-  
Laugh and Read*



"'Pears like them Army fellers is buildin' a bridge . . . wonder what fer?"



**TUNE IN  
AUTO-LITE'S  
GREAT RADIO SHOW  
"Everything  
For The Boys"**

Featuring men and women at  
the fighting fronts.  
Every Tuesday Night—NBC Network

**Play it safe with ...  
"PLUG-CHEK!"**

Right now, car owners need every mile they can get from every gas coupon. And you can help them by using "Plug-Chek"—Auto-Lite's famous spark-plug inspection service. "Plug-Chek" is the easy-to-use service tool that helps save gas by spotting faulty and improper plugs.

Give your customers the benefit of "Plug-Chek" Inspection Service today. Just ask your jobber for the FREE kit which includes both "Plug-Chek" Indicator and Data Book, or write to

**THE ELECTRIC AUTO-LITE COMPANY**  
TOLEDO, 1      Merchandising Division      OHIO

Back the Attack . . . Buy MORE than before



**AUTO-LITE SPARK PLUGS**  
IGNITION ENGINEERED BY IGNITION ENGINEERS

## North Carolina Dealers Choose Wray President

The North Carolina Automobile Dealers' Association, at its 10th annual meeting at Asheville, N. C., June 4-6, elected W. H. Wray, of Gastonia, as its president for the coming year to succeed C. L. Carrow, of Kinston. Wray served the organization as vice-president during the year just ended.

Other officers elected by the association are: F. J. DeTamble, of Winston-Salem, vice-president; S. D. Lovelace, of Wilson, secretary; Walter Harrington, of Greenville, treasurer; E.

O. Thomas, of Asheville, director of the National Automobile Dealers' Association, and Miss Bessie B. Phoenix of Raleigh, executive secretary. The latter had served previously.

Approximately 350 dealers attended.

Speakers and their topics included: David G. Kelly, president of the National Automobile Dealers' Association; Ray Chamberlain, executive vice-president of the NADA; W. J. Wilkins, president of the Virginia Automotive Trade Association, who spoke on the Virginia licensing law; K. B. Elliott, vice-president of the Studebaker Corp., and N. C. Dezendorf, of General Motors.



Bert Dingley

## The Name Is Dingley

While employed by various automobile companies from 1904 to 1914, Bert Dingley became one of the leading race drivers in the country, winning stock-car and speed contests from coast to coast. One of his notable achievements was to place in the gruelling and dangerous Fairmount Park race in Philadelphia in 1909.

During the first World War, he was stationed at the Nordyke-Marmon plant, as chief inspector of Liberty Motors.

He was appointed service manager of Stutz in 1925 and became vice-president of the company in 1929. In the latter year he was elected chairman of the Indianapolis section of the SAE.

In September, 1942, Dingley was made president of the Marmon-Herrington Co., Inc., Indianapolis.

## Starts New Air Program

Earl Godwin, veteran newspaperman and popular radio commentator, will launch a 15-minute weekly program over 170 Blue Network stations beginning Friday, July 7, from 10 to 10:15 p. m., EWT. Sponsor will be the Hastings Manufacturing Co., of Hastings, Mich., manufacturer of piston rings.

His new program, confined to factual news reporting, is leavened with his usual touches of humor and homely philosophy.

## Heads Replacement Sales

Announcement is made by Wilkening Manufacturing Co., Philadelphia, maker of Pedrick piston rings, of the advancement of Sam S. Evans to the post of manager of the company's Replacement Sales Division.

Evans has been with the Pedrick organization for 17 years. From 1935 until 1942, he was manager of the New England territory, and since then has been assistant manager of the Replacement Sales Division.

*Compare  
others  
WITH AP*

**ENGINEERED CONSTRUCTION**



● There's a difference in cars—and there's a difference in mufflers! AP builds mufflers right—with **ENGINEERED CONSTRUCTION!** This assures each muffler correctly designed and correctly built to deliver **ORIGINAL EQUIPMENT PERFORMANCE**... The AP Parts Corporation, Toledo, Ohio.

**MILEAGE GETTING  
MUFFLERS**

# CHEVROLET *Dealer* SERVICE

★ FIRST ★  
★ IN WAR ★  
★ FIRST IN PEACE ★

**1** out of every **4**  
**is a-Chevrolet!**

Chevrolet dealers are busy helping to "save the wheels that serve America" . . . because one out of every four cars and trucks now running is a Chevrolet . . . and because Chevrolet dealers are servicing not only Chevrolet products, but also all makes of cars and trucks. . . . "Where leadership is greatest, responsibility, too, is greatest" . . . Chevrolet dealers are meeting the responsibilities of leadership by helping to maintain America's great motorized transportation system during the war emergency.

CHEVROLET MOTOR DIVISION, General Motors Corporation, DETROIT 2, MICHIGAN

★ ★ ★ BUY WAR BONDS . . . SPEED THE VICTORY ★ ★ ★



## "FIRST IN SERVICE"

## Sheehan Picked to Head Engine Rebuilder Group

E. M. Sheehan was elected president of the Automotive Engine Rebuilders Association at that organization's 22d annual three-day meeting at Cincinnati last month. He succeeds Hal Miller, who was presented with a wrist watch in appreciation of his services during the preceding year.

J. C. Rogers was named first vice president and P. J. Sawyer second vice president. J. J. Eldridge was elected secretary, C. W. Young being named treasurer. R. G. Patterson was designated executive vice president.

The executive committee consists of Hal Miller, G. W. Kleinschmit, J. R. Riley, and J. O. Wharton.

Directors are Franklin C. Bradley, L. V. Dana, Henry J. Dinkmeyer, William A. Fleming, D. H. Goldman, E. C. Hill, Carl Hoffman, J. M. Jennings, V. Leonard Love, William J. Menghini, James Pringle, and H. B. Truslow.

## Service Managers Added

Intensification of the field service personnel of the Cadillac Motor Car Division as an aid in conserving present irreplaceable rolling stock was disclosed in the announcement by D.

E. Ahrens, general sales manager, that four district service managers have been added to the staff of George W. Otto, general parts and service manager.

They are: N. W. Metzger, with district headquarters at Chicago; G. M. Tinney, Rochester; M. R. Sugg, Dallas, and H. M. Wooton, Boston.

All men have had years of experience in the Cadillac parts and service organization and for more than two years have been on special assignment in various phases of the Division's war production program.

## Sales Meeting Broadcast

A coast-to-coast sales meeting, the first of its kind in the history of the battery business, was heard May 25 by salesmen and distributors of the Prest-O-Lite Battery Co., Inc., Indianapolis, Ind. The broadcast, conducted by A. A. Feldman, sales manager of the company, featured Prest-O-Lite's 1944 advertising and promotion campaign.

During the broadcast it was explained that Prest-O-Lite not only is going to use trade magazines but in August will launch a nation wide radio "spot" announcement program. The slogan "The Battery With A Kick," will feature all Prest-O-Lite's advertisements during the campaign. A kicking horse will be carried in all displays.

The program was presented earlier to representatives and sales executives of the company during a recent special meeting at Indianapolis. The complete program was outlined and plans for carrying it out were discussed.

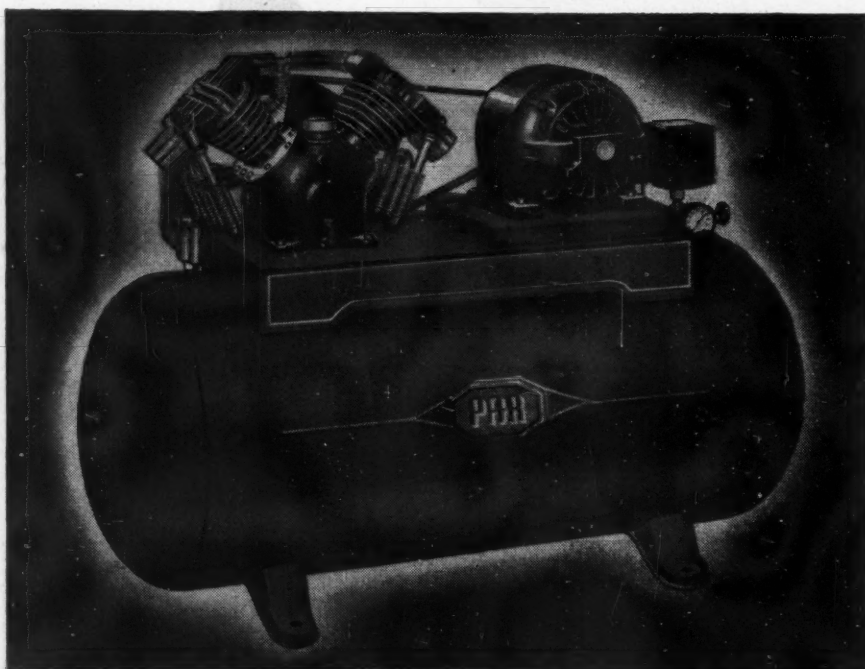
The following district representatives also were in attendance.

Howard W. Post, Newark, N. J.; William F. Sadler, Spartansburg, S. C.; Don E. Sanders, Jackson, Miss.; James L. Parker, Daytona Beach Fla.; Dudley E. Martin, Nashville, Tenn.; Ed N. Krook, Long Island City, N. Y.; James A. Franklin, Buffalo, N. Y.; George M. Robertson, Pittsburgh, Pa.; E. C. Paul, Holyoke, Mass.; Fred D. Lowell, Jr., Norfolk, Va.; William J. Mergard, Detroit, Michigan; Paul Bonham, Indianapolis, Ind.; William J. Nolan, Chicago, Illinois, and Stanley E. Jacobson, St. Louis, Missouri.

## Stockholders Drop

The total number of General Motors common and preferred stockholders for the second quarter of 1944 was 423,752, compared with 423,780 for the first quarter of 1944 and with 414,427 for the second quarter of 1943.

There were 402,033 holders of common stock and the balance of 21,719 represents holders of preferred stock. These figures compare with 402,155 common stockholders and 21,625 preferred for the first quarter of 1944.



## PAR MODEL 20

- A Heavy Duty 2 H.P. two stage 4 cylinder compressor equipped with 60 gal. tank.
- Designed especially for the average station or shop doing more than usual volume of air appliance operations.
- Maintains tank pressure of 175 pounds, assuring adequate air supply at all times.

● Write for illustrated brochure of details.

● BY COMPARISON—YOU'LL BUY PAR.

## PAR DIVISION

LYNCH MANUFACTURING CORPORATION  
DEFIANCE, OHIO, U. S. A.

ONE SMALL TOOL  
does  
two big  
jobs

Better...Faster  
at lower cost

THE NEW

**Thor Multi-Matic**

**AIR SANDER-POLISHER**

NOW, you can harness the magic power of air with these new Thor Multi-Matic Air Tools to get for your shop work factory production efficiency. With this 2-in-1 Thor Air Sander-Polisher, for example, you get a tool that can't be stalled ...yet can be used with one hand to reach places you'd never touch with ordinary tools.

A simple regulator enables you to vary the speed at will to use it either as a sander or a polisher. It runs on air from a compressor as small as 1½ H.P. It's safer to use and costs less to maintain than electric tools because it has no brushes, no commutator, no armature to short or burn out.

COMPACT  
LIGHT  
POWERFUL

This is just one of Thor's new Multi-Matic air tools. The complete line includes ¼" and ½" Drills, Grinder, and Sander-Polisher. Each is available as a unit. And, any Multi-Matic tool can be changed into other tools with interchangeable attachments.

THOR PORTABLE ELECTRIC TOOLS have exclusive features of design and construction that provide unequalled performance efficiency. A complete line of electric drills, grinders, sanders and polishers for all light and heavy duty automotive service.



REPAIR THE CARS  
WITH THE TOOLS  
THAT BUILT THEM

PORTABLE

Electric

**Thor**

TOOLS

Pneumatic

Sold by Leading  
Jobbers  
Everywhere

Independent Pneumatic Tool Co.  
600 W. Jackson Blvd., Chicago 6, Ill.

Send full information on the  
☐ Thor Multi-Matic Air Tools  
☐ Thor Portable Electric Tools

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

JULY, 1944

When writing to advertisers please mention Motor Age

87

## Post-War Unemployment Pay Plan Is Proposed

Designed to simplify the problems of reconversion and ease the shock of unemployment after the war, a post-war unemployment compensation plan was outlined at a press luncheon at New York June 9 by Col. Willard F. Rockwell, chairman of the board of the Timken-Detroit Axle Co., the Hupp Motor Car Corp. and other corporations.

The program, which will be laid before the Senate Finance Committee, would permit war-production

plants to withhold from gross income after taxes and normal profit, and before renegotiation, a sum equal to one average week's wage or salary for each month of continuous service of each person on the payroll. The maximum would be 24 weeks' wages or salary for employees who have worked two years or more. An equal sum would be withheld for each ex-employee now in the armed forces.

Funds would be held by each company and, at the time of complete cancellation of war contracts, would be paid at a rate conforming to state or federal unemployment compensation. All withholdings and payments



"This tire was formerly used by a minister who only drove on Sundays."

would be reported to the Social Security Board.

Payment to an unemployed former employee would continue until the company could reemploy the person at a job of comparable skill and compensation, or until he accepts other employment, or until the fund set up to his credit has been exhausted. Any unexpended funds at the end of two years would be turned over to the government.

The withholdings, Col. Rockwell declared, would be made before renegotiation of contracts, and the funds, until expended, could be used by the company to finance reconversion of its plant or plants to peacetime production.

## Goes to West Coast

Effective July 1, Ed. J. Butler took over sales and distribution in the Pacific states area for a limited number of leading manufacturers serving the industrial and automotive trades. Butler is widely known among distributors and users of industrial and automotive materials, parts and equipment, having spent practically his entire life as sales executive in the employ of manufacturers of such products. His offices are at 277 Seventh St., San Francisco.

## Wins Civilian Citation

Errol J. Gay, manager of the bus, truck and fleet division of Ethyl Corp., has been awarded the emblem for Meritorious Civilian Service by the Army for overseas achievement as a technical civilian advisor on petroleum problems.

Gay was cited by Lt. General Brehon Somervell, chief of the Army Services of Supply, "for contributing greatly to the standardization of fuels and lubricants and containers now employed by the armies of the United Nations during two overseas theater missions."

Gay has just returned from a third overseas mission.

In the service of Ethyl Corp. for 14 years, Gay is nationally known for his work with manufacturers of heavy-duty engines and operators of bus and truck fleets.

# America's Finest

for

**AUTOMOTIVE INSTALLATIONS, FARM TRACTORS, HOUSEHOLD and COMMERCIAL REFRIGERATION, AIR CONDITIONING, OIL BURNERS, BOTTLED GAS, MACHINE TOOLS, INDUSTRIAL EQUIPMENT, ETC.**



**25-FOOT**

**Paper Wrapped Coils**

# EVERFLEX Seamless

## THERMOSEALED DEHYDRATED COPPER TUBING

**Both ends sealed to protect from dust, dirt, moisture, oxidation**

Supreme quality tubing that successfully meets the most exacting requirements. Reaches you without flat spots, dents, kinks or variations in roundness and temper. Free from "burns," seams, laps, slivers or other defects.

**Ask Your Jobber or Write to**

# EVERHOT PRODUCTS CO.

2055-59 W. CARROLL AVE.

CHICAGO 12, ILL.

**99.8%  
PURE  
COPPER**

# AUSCO'S Post-War Hydraulics

## GOOD NEWS ABOUT THESE WORLD-PROVEN JACKS!

Proven under every conceivable condition from the heat of deserts to the sub-zeros of the arctic . . . that's the record of Ausco Hydraulics now serving our armed forces all over the world!

GOOD NEWS, now, for you who are keeping America's essential transportation rolling. Military requirements now permit that some of these WORLD-PROVEN jacks with their many advanced post-war features can be made available to you.

Ask your Ausco jobber for particulars. And if you can't yet obtain the Ausco Jacks you need, remember they're worth waiting for! Auto Specialties Mfg. Co., St. Joseph, Michigan; Windsor, Ont., Canada.

Watch **AUSCO**  
for the Latest in Jacks

FOLLOWING IS A PARTIAL LIST OF WAR MATERIALS AUSCO IS HELPING TO PRODUCE:  
Ordnance Ammunition Steel Castings ☆ Armor Piercing Shell ☆ Trench Mortar Bombs  
Complete Tracks for Tanks and Combat Vehicles ☆ Hydraulic and Mechanical Jacks

## Brake Promotion Launched

A complete nation-wide promotional and educational program to announce availability of a new "Hydrovac" power-braking system for critically needed replacements on essential home-front vehicles is being set in motion by the Bendix Products division of Bendix Aviation Corp., it was announced recently by Frank B. Willis, automotive sales director.

First new "battle-proved" automotive equipment unit to be made available generally as an aid to vital home-front transportation, the Bendix "Hydrovac" combines all the elements of

vacuum power braking into a single, compact, self-contained unit, Willis stated.

First stage of the program will be a broadside folio to Bendix B-K distributors and dealers, providing them with illustrated description of the new "Hydrovac" units and their applications, together with sales aids for presenting the product to fleet and vehicle operators.

A series of three educational brochures also will be mailed by Bendix Products directly to fleet owners, it was stated.

Following this, a series of group meetings will be conducted with fleet

maintenance and service representatives throughout the nation.

## New Sales Agreements Offered Dealers by GM

New selling agreements, now being distributed to General Motors dealers, contain no provision for termination without cause. Agreements signed since 1939 stipulated that termination could be effected only in July, August, and September. Under still earlier agreements, the contract could be ended at any time on three months' notice.

Further, the new agreements contain a stated term, to expire two years following the resumption of new passenger-car production. Contracts now in force, except for those held by a few new dealers, were signed as of October, 1941, and contain certain modifications made since that time. These include changes in the clauses relating to infringement, bootlegging, claims of loss on leaseholds, the use of genuine parts, and a rider transferring the contractual relationship to the General Motors Corp., from the General Motors Sales Corp., which was dissolved. The changes have been included in the new agreements.

General Motors divisions, at least three months before the new agreements expire, will offer a new contract to dealers that have satisfactorily fulfilled the terms and conditions of the agreement then current.

## Davis to Head Ford Sales and Advertising

It was announced June 1 that J. R. Davis has been appointed director of sales and advertising for the Ford Motor Co. by Henry Ford, II, Ford executive vice-president.

Davis, a member of the Ford sales organization since 1919 recently returned to Dearborn from the West Coast where he was Western region manager for the Ford company for the last five years.

According to Ford the appointment of Davis is one of the steps being taken to rebuild the Ford sales organization for post-war operations.

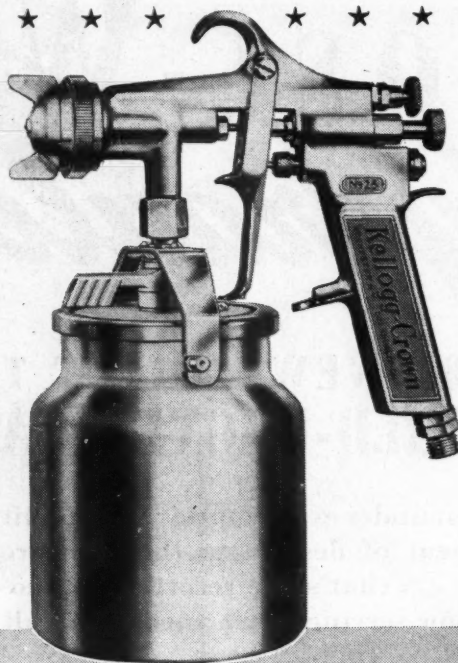
## Joins Ring Company

Walter A. Clouser has joined Muskegon Piston Ring Co. as sales and service engineer. He will make his headquarters in the company's Detroit office.

Clouser brings to his new responsibilities 31 years of experience in the automotive field. After 13 years in engine rebuilding and service, he entered manufacturing. For the past 18 years he has been connected with Wilkening Manufacturing Co.—first as salesman, later as division manager, and more recently as sales manager.

**ALWAYS  
READY FOR  
TOUGH  
WORK...**

**KELLOGG-CROWN**  
"25"



Here's a spray gun that feels right—and *is* right; and it's built to take it. Easily-accessible, easily-operated precision controls—non-tiring, free-swinging balance. For better, more profitable finishing, look into the Kellogg-Crown line of paint spray equipment. For *the most air per dollar*, your choice will swing to a Kellogg-American air compressor—built for hard work, long life, low operating cost.

**Kellogg-American**  
REG. U.S. PAT. OFF.

AMERICAN  
**Brake Shoe**  
COMPANY

**Kellogg Division, Rochester 9, New York**

AIR COMPRESSORS • PAINT SPRAY EQUIPMENT • CAR LIFTS • CAR WASHERS

# PRESTONE

TRADE MARK

*Anti-Freeze*

*"Prestone" anti-freeze, America's first permanent type anti-freeze, will be available this year to give sure-fire protection to the cooling systems of your customers' cars.*

**T**HIS YEAR there will be no restrictions on sales. You can sell to any customer, regardless of the use to which he wishes to put his car or truck.

"Prestone" anti-freeze will be distributed in accordance with a state allocation plan worked out by the War Production Board and the Anti-Freeze Industry Advisory Committee. Under this plan there will be enough anti-freeze to protect all the nation's motor vehicles. However, there will probably be shortages of certain brands in certain localities.

Because of the needs of the Armed Forces, the total supply of "Prestone" anti-freeze for 1944 will be considerably less than the gallonage manufactured in former years. It may be necessary for you to disappoint some of your customers. If that happens, we are sure they will understand your position—for we plan to publish in magazines and farm papers advertisements which will give the public a correct picture of the supply situation.

**NATIONAL CARBON COMPANY, INC.**

*Unit of Union Carbide and Carbon Corporation*



The registered trade-marks "Prestone," "Trek" and "Eveready" distinguish products of National Carbon Company, Inc.

## **"Trek" High Test Anti-Freeze**

A small quantity of this popular \$1.00 a gallon high test anti-freeze is available. "Trek" High Test anti-freeze is treated concentrated methanol which delivers the most protection per unit of volume of the "volatile" types. Contains an inhibitor which gives protection against rust, corrosion, "foaming" and clogging. Every drop is anti-freeze. In 5 gallon cans only. **O.P.A. Retail Ceiling Price, \$1.00 per gallon.**

## **"Trek" "Wartime Formula" Anti-Freeze**

This is an emergency wartime anti-freeze available to dealers in limited quantities. It is a blend of methanol and isopropanol and provides protection comparable to the commonly accepted ethyl alcohol anti-freezes.

In selling this anti-freeze consult the Protection Table plainly stamped on each drum of "Trek" "Wartime Formula" Anti-Freeze. Follow it carefully! And, in testing strength of solution, **always use ethyl alcohol tester!** "Trek" "Wartime Formula" Anti-Freeze is available in 54 gallon drums only! **O.P.A. Retail Ceiling Price, \$1.00 per gallon.**

## Building Engine Plant

The contract for a large addition to the Chevrolet Aviation Engine Plant No. 1 in Tonawanda, N. Y., has been awarded and construction is already under way, according to an announcement by M. E. Coyle, general manager of the Chevrolet Motor Division and vice-president of General Motors Corp.

Of modern steel and glass construction, the 317 by 360 ft. addition provides 114,120 sq. ft. of extra manufacturing space, in which will be housed efficient and up-to-date assembly lines devoted exclusively to the

production of a new, more powerful type, 18-cylinder Pratt & Whitney aircraft engine. A refinement of the P&W R-2800, this new power plant is designed to meet the demands for a heavier-duty engine to power the faster, fighter planes and fighter bombers now scheduled by the Army Air Forces for quantity output.

## Firm Changes Name

The Sinko Tool and Manufacturing Co., of Chicago, has changed its corporate name to Santay Corp. The address is 351 N. Crawford Ave., Chicago 24, Ill.



"If we ever do get home, I'm going to throw that plunger out, then maybe he'll let a repairman flush that radiator out right."

**NOW AVAILABLE!**

**PURITAN  
GASKA-SEAL**



If Your Jobber Can't Supply You—  
MAIL THIS COUPON TODAY

**PURITAN  
COMPANY, INC.**  
ROCHESTER, NEW YORK

To help "Keep 'em Rolling"—  
use with or in place of Gaskets

### No. 1—Dries Hard

Here's the ideal sealing compound for making permanent connections. Spreads easily, sticks quickly and holds firmly.

### No. 2—Stays Pliable

No. 2 should be your choice for gas, oil and motor connections which you may later wish to remove. Does not harden, turn brittle or crack.

PURITAN CO., INC.  
573 Lyell Ave., Rochester 6, N. Y.

- ☐ Please have nearest N.A.P.A. jobber supply me with Gaska-Seal.  
☐ Please demonstrate advantages of Gaska-Seal.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

## Truck Meetings Listed

More intensive and expedient methods of conserving the nation's vital truck transportation facilities for the duration, and a well-charted course for dealers in the critical days of the early post-war period are major subjects of a series of two-day truck conferences in key points from coast to coast during July and August, according to an announcement by W. E. Fish, manager, commercial and truck department, Chevrolet Motor Division of General Motors.

"Our summer-long truck program is one of the most important and comprehensive we have ever conducted," said Fish. "Every phase of truck maintenance, including parts availability, personnel, dealer building design and space layout, truck maintenance tools and equipment, mechanics' training, business management of the dealers' truck service operation, advertising, promotion and all other essentials will be thoroughly studied and discussed in the two-day meetings."

## Becomes Sales Manager

The Minnesota Mining and Manufacturing Company of St. Paul, Minn., recently announced the appointment of W. J. Heil as sales manager of Automotive Trades with headquarters at the Detroit branch. Heil will be in charge of all Minnesota mining products being sold to automobile and body manufacturers with the exception of 3-M Cement which is sold by the Adhesive Division.

Heil spent a number of years prior to 1941 calling on the automotive trade. In July, 1941, he went to the West Coast for the company and in 1943 became West Coast sales manager.

# HANSEN



## AUTOMOTIVE AIRLINE EQUIPMENT

**Hansen Automotive Air Hose Couplings** have been first choice in the automotive field for the past twenty years because they don't leak, saving air; they're easy and fast to operate, saving time.

Hansen couplings are especially adapted for garages and filling stations. They are rugged and will take plenty of rough usage indoors as well as outdoors. Easily attached and detached, complete swivel action prevents kinking of hose and excessive wear.

**Hansen Sand Blast Cleaners** are hard hitting units which do a quick and thorough job removing rust, paint, carbon; also ideal for cleaning parts for welding and soldering. ... Container holds 3 pounds of silica sand,

operates efficiently from 125 pounds air pressure.

**Hansen No. 82 Jet Oiler** reaches the hard to get at spots on a car that are so important yet neglected because of their inaccessibility. Convenient handle permits this oiler to be aimed in practically all directions without cramping hand or wrist.

Manually operated it projects a solid jet of light or penetrating oil when plunger is depressed. All pump parts are enclosed and protected from dirt and breakage.

Automatic nozzle cleaner eliminates clogging of nozzle. Oil container has a capacity of one quart, is heavily plated and buffed to a mirror finish. Send for free automotive catalog.

**HANSEN MANUFACTURING CO.**  
1786 EAST 27th STREET • CLEVELAND, OHIO

### 3 Managers Appointed

As part of a program aimed at broadening wartime dealer service, and to provide for post-war car sales requirements, H. C. Doss, vice-president of Nash-Kelvinator Corp. in charge of Nash Motors, has announced the appointment of three executives.

Among the first of a series of promotions to be made from within the organization, Doss has appointed Virgil E. Boyd as central office manager at Detroit named Don D. Boden as zone manager at St. Louis and advanced J. B. Fountain to zone manager at Milwaukee. The parts depot

at St. Louis will be expanded while a similar depot will be operated in Milwaukee in conjunction with Nash's central warehouse in that city.

### Division Offices Opened

A new sales set-up under which all company products will be handled nationally from seven divisional offices is being installed by National Carbon Co., Inc., it is announced. Four of the new offices are in operation and the others will be added by Oct. 1.

All sales activities in the Southeast have been consolidated under a new Atlanta Division office. J. F. Warnell,

has returned to Atlanta as division manager. This division will comprise, in addition to Georgia, the states of Virginia, North and South Carolina, Alabama, Florida, and most of Tennessee.

C. C. Joslyn is manager of the new Dallas, Tex., Division. This division will comprise, in addition to Texas, the states of Kansas, Oklahoma, New Mexico, Mississippi, Louisiana, and part of Tennessee.

At Kansas City, A. C. Bryan has taken over as division manager. His division will comprise, in addition to Missouri, the states of Kansas, South Dakota, Wyoming, Nebraska, Colorado, western Illinois, and most of Iowa.

On the West Coast, R. P. Tolles, succeeds to the direction of the new San Francisco organization. From this headquarters will be directed sales in this state, Washington, Oregon, western Montana, Idaho, Utah, Arizona, and Nevada.

### Vice Presidents Named

Eisemann Corp., Brooklyn, N. Y., manufacturers of magnetos, generators, ignition and fuel-injection systems, announces appointment of Henry R. Metz as vice president in charge of operations, and Lloyd H. Scott as vice president in charge of engineering.

Metz joined the Eisemann Corp. recently as works manager and previously was engaged in several major defense projects.

Scott has been chief engineer of the corporation.

### Albert G. Betteley

Albert G. Betteley, one of the original but little-known pioneers in spark-plug ceramics, died recently in Detroit. Betteley was a true automotive pioneer—a master craftsman in hand-molding of special ceramic shapes, in the days when those methods were still employed. Joining the Jeffrey-Dewitt organization in 1908 in Bordentown, N. J., Betteley has worked since then with that firm and the Champion Spark Plug Company, following their merger in 1922.

### Appointed Lube Manager

F. R. Cross, manager of the Lubrication Equipment Division of The Aero Equipment Corp., of Bryan, Ohio, announces the appointment of Jack Palmer as Lubrication Equipment Division manager of the New York Metropolitan territory.

Palmer has had a broad and varied background of experience in the field of lubrication service and service promotion. He served in various capacities, both inside and in the field, with the service departments of a number of General Motors units, and for the past six years has been field sales supervisor in the East for the Alemite Division of Stewart-Warner Corp.

## How far is 34,000 MILES?



34,000 miles is, roughly, 11 trips across the United States.

Camel Patches have been road-tested over 34,000 miles in all kinds of weather. Tubes with as many as eight Camel Patches are giving perfect, uninterrupted service every day.

You can recommend Camel Vulcanizing (Hot) Patches without hesitation. They will repair either natural rubber or synthetic tubes. No electrical equipment needed, simple to stock, easy to sell, with ready customer acceptance. Stock this vital repair item now to keep cars on the road!

## CAMELS HAVE EVERYTHING:

Camels are the right combination of filler ingredients, the correct synthetic patch, and the best heat element. They are easy to sell because they quickly patch both rubber and synthetic tubes. They are easy to apply, and bond firmly. And, they're sales-repeaters.

Camel is the patch you want!



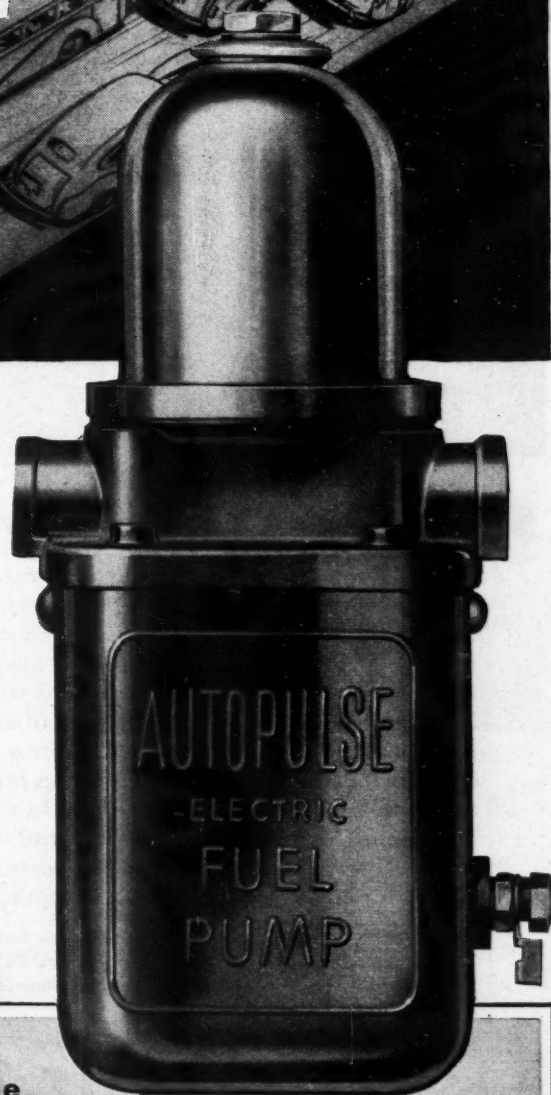
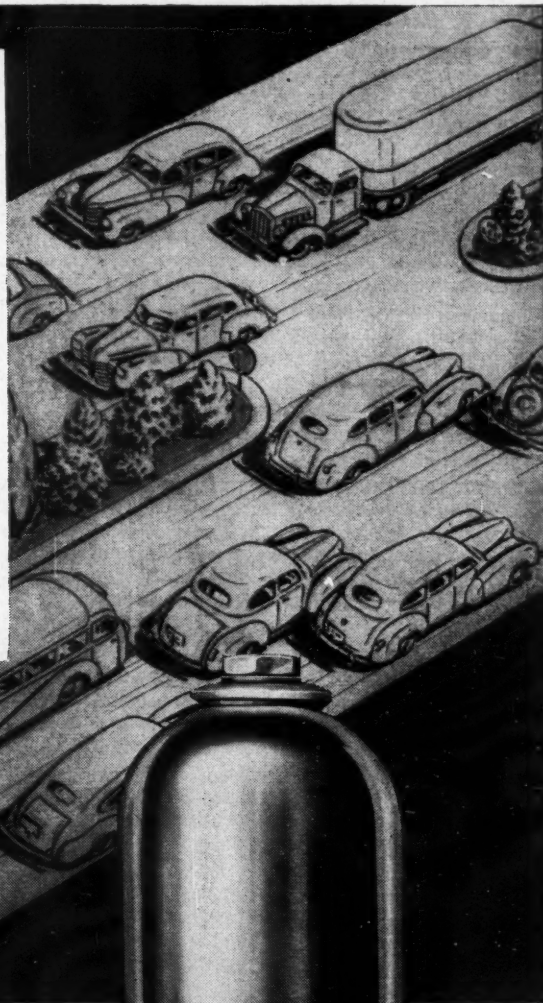
Saf-T-ply Rubber is used in all Camel Vulcanizing Patches and each patch is designed, perfected and sold by the H. B. Egan Manufacturing Company, Muskogee, Okla. Write for the name and address of the representative in your state.



## CAMEL Patches

# **HERE'S THE FUEL PUMP**

**THAT RUNS ALL  
TYPES OF CARS**



**THE AUTOPULSE** electrical fuel pump is used on any make of car, truck or bus without alteration—one universal pump. When you standardize on the Autopulse, you won't need a complicated inventory, and you will always be in position to serve all your customers promptly.

Every Autopulse you sell will help build goodwill for you because of its superior performance in comparison with the conventional camshaft mechanical pump. It saves gasoline. It keeps the engine from stalling in traffic. It is a sure cure for vapor lock. It assures quick cold weather starting. It does not depend on engine speed. All this has been proved over a period of 20 years of service on cars, trucks and bus fleets.

The Autopulse is easy to install and very profitable for the dealer.

**AND YOU CAN HAVE ALL YOU NEED  
NO RESTRICTIONS**

Get in touch with your jobber or write the

## **AUTOPULSE CORPORATION**

2821 Brooklyn Ave., Detroit 1, Michigan

## Quick Block Repairs by Electric Bonding

Repairing cracked cylinder blocks by Electric Bonding is saving time and money for all shops that have installed this equipment according to the Metallizing Co. of America, 1330 W. Congress St., Chicago.

The only tools needed for the procedure are a  $\frac{1}{8}$  in. to  $\frac{3}{16}$  in. round-nose cape chisel, narrow V-type pointed chisel, center punch ground to almost a round point, hammer and hand grinder with small mounted wheels. The process consists of eight steps described by the manufacturer as:

No. 1—With the  $\frac{1}{8}$  in. round-nose cape chisel, a groove is cut from  $\frac{1}{8}$  in. to  $\frac{3}{16}$  in. deep and wide down the middle of the crack, allowing a square shoulder on each side of the crack (do not feather away). The groove should be out at least  $\frac{1}{4}$  in. beyond the end of the crack.

No. 2—A very narrow V-pointed chisel is now used, tapping thoroughly to compress the metal at the crack.

No. 3—The crack is now ready to be bonded. Set the Bonder terminal control. It will probably be necessary to hold the rod in contact with the surface for a few seconds until the rod gets red hot from  $\frac{1}{2}$  in. to  $\frac{3}{4}$  in.

back, and keep it like this while bonding. If the rod gets too hot, lumps will come off and not form a fine, dense deposit. Lay a layer of nickel in the bottom of the groove only by agitating the electrode (similar to striking a match) across the surface. Move slowly to insure laying a good deposit.

No. 4—With the center punch ground down to almost a round point, lightly peen the nickel thoroughly in the crack.

No. 5—A little different procedure is used to fill up the crack. Reset the bonder control. First, hold the electrode at an angle of 45 degrees, proceed to pass electrode slowly over the cracked area, and allow material to fill up the cracked area as the rod is drawn toward the operator.

No. 6—Now reset the bonder control and rub the electrode over the nickel deposit densing the nickel down to a more solid mass and filling in porous areas.

No. 7—The excess metal must be finished flush. To finish the bonded deposit use a small hand grinder.

No. 8—To eliminate any remaining traces of porosity in the deposited nickel, Mogul Colloidal Solution is recommended by the manufacturer. This solution is put in the cooling system and after running the engine it is drained and the system is thoroughly flushed.

In repairing cracks in aluminum cylinder heads, follow the same procedure but substitute pure aluminum rod in place of nickel.

## Sales Chiefs Appointed

L. F. Weyand, general sales manager of Adhesive Products for the Minnesota Mining and Manufacturing Co. of St. Paul, Minn., recently announced the appointment of J. E. Johnson as sales manager of adhesive products in the Eastern Division with headquarters in the company's New York office at 155 Sixth Ave., and C. T. Bloom as sales manager of the adhesive products for automotive trades with headquarters in the company's Detroit office at 411 Piquette Ave.

Both men have been in the sales end of the Adhesive Division of Minnesota Mining and Manufacturing Co. for a number of years and are well-known.

## NADA Names Wilson

Thomas W. Wilson, of Baltimore, has been appointed an executive vice president of the National Automobile Dealers Association. Announcement was made at the conclusion of the two-day session of the executive committee at Washington last month.

Among the business that came before the meeting was the appointment of a dealer advisory committee to work with Lee Moran, who was recently chosen by Treasury Procurement to take charge of the disposal of surplus automotive goods for the government.



Before using SOL-SPEEDI-DRI

After using SOL-SPEEDI-DRI

## Save hours of back-breaking labor

FORGET your mops, your stiff brooms, your brushes, your caustic compounds. Oil and grease can be cleaned up *more efficiently* simply by spreading SOL-SPEEDI-DRI on your floors. This remarkable product absorbs oil and grease like a blotter soaks up ink. It makes your floors skid-proof, oil-free, grease-free, and fire-retardant. Saves you from complaints of customers who track oil into their cars. Toss your oily wrenches and other tools into a box of SOL-SPEEDI-DRI and when you want them again they'll be free from oil. Thousands of busy shops have found SOL-SPEEDI-DRI to be the answer to their floor maintenance problems. It's great stuff! Write for literature and a generous, FREE SAMPLE.

SUPPLIERS: East — Refiners Lubricating Co., New York 1, New York.  
Midwest & South — Waverly Petroleum Products Co., Philadelphia 6, Pa.  
West Coast — Waverly Petroleum Products Co., Russ Bldg., San Francisco 4, Calif.



# REO'S

★

From Hamilton, New York: "We are very much interested in starting to plan our postwar activities with Reo. Will you please send us a copy of the questionnaire mentioned in the last paragraph of your letter?"

★

From Louisville, Kentucky: "In our office today was a large operator who is using a hundred trailers. During the past year he purchased a couple of Reo Trucks and spoke so highly of them we think it might be well for someone in this territory to handle your line."

★

From Cincinnati, Ohio: "Would be very much interested in receiving the 'Big 7' questionnaire as outlined in a recent Reo advertisement."

★

From Columbus, Nebraska: "I must say that Reo always did build great trucks. I have one myself—bought it in 1918—and it is still in good running condition. I would like to know more about the Reo Factory-Dealer Plan."

★

From Durango, Colorado: "I am looking forward to receiving the brochure you mention, and I wish to investigate your 'Big 7' Factory-Dealer Plan."

★

From Winsted, Connecticut: "We believe you have a good product and will be interested in receiving literature when it is available as well as trucks when you are back in production for civilian use."

★

New Philadelphia, Ohio: "When would be the proper time to start talking with you about selling Reo trucks? We have never sold motor trucks before but we like the one Reo that we purchased from you so much that we would like to buy more and as there is no dealer in our territory we thought possibly we might be able to sell some. Please send the 'Big 7' questionnaire."

Mail a postcard today asking for the Reo "Big 7" Questionnaire.



## "7 PILLARS OF PROSPERITY"

... designed to help you make money



Dealers everywhere write: "Tell us about your Plan!"

Letters pouring in from all sections of the country indicate that car and truck dealers are tremendously interested in the Reo "Big 7" Dealer Plan. They are asking for the "Big 7" questionnaire, which helps dealers to jot down their opinions about discounts, size of territory, service parts inventories, and other very important points—seven in all!

Reo wants your ideas on these subjects. Write for the convenient questionnaire today . . . help Reo build the "7 Pillars of Prosperity" into a franchise that will stand as a model for the industry when the war is over.

REO MOTORS, INC. • LANSING 20, MICHIGAN

Factory Branches in Principal Cities



When writing to advertisers please mention Motor Age

119

## Advisory Groups Formed

(Continued from page 40)

Representatives of dealers and distributors, major and independent companies, with cooperatives, trackside stations and other types of marketing organization have been named to the advisory groups.

Other committees are being named as fast as they can be formed. The goal is a committee in every OPA district.

## New Car Eligibility Rules Are Tightened by OPA

With the supply of new 1942 cars rapidly approaching the vanishing point, the OPA has further tightened eligibility rules. Only persons requiring cars for the most essential occupations are now permitted to buy the cars. Other changes permit certain persons to buy or sell cars without a rationing certificate.

Members of the armed forces can sell their 1942 cars without rationing certificates only to members of their families. A joint owner may acquire an additional interest in a car by obtaining a clearance statement. An owner whose car has been repossessed may regain it without a certificate. Junk or salvage companies may ac-

quire a damaged 1942 car without a rationing certificate, provided it is not used by the company.

## Higher Output Okayed for Valve and Ring Tools

BY removing piston-ring compressors, valve or clutch spring testers ring-groove cleaning tools, and valve-spring compressors from Limitation Order L-270 and reclassifying them as hand service tools under General Preference Order E-6, the WPB has made it possible for manufacturers to produce larger quantities of such tools. Until May, production of such tools has been limited by L-270 to 75 per cent of the manufacturer's 1941 sales, but this was upped to 100 per cent. Now the manufacturer may produce them to fill WPB 547 orders within the limits of his material allocation.

Jobbers may order the tools on WPB 547 for stock and sell them to ultimate users without preference ratings.

## Recent Rulings

**DRY-CELL BATTERIES.** Price ceilings for dry-cell batteries, acquired from surplus military stocks, have been imposed by the OPA. Those designated as "salvage" may be sold up to 80 per cent of the March, 1942, prices for the most closely compar-

able civilian battery, while those designated as "scrap" may be sold up to 50 per cent of the base price.

\*\*\*

**SOLID TIRES.** Cured-on solid tires for special vehicles, such as tractors and roadgraders, are no longer subject to allocation, the WPB has ruled in a revision of Appendix IV of Rubber Order R-1. The revision also makes several changes in the procedure of obtaining tires.

\*\*\*

**GAS PERMITS.** When special grants of gasoline to holders of B and C books call for fractions of the coupon value, the OPA now issues purchase permits for the odd amount. For example, a person granted 31 gal. would be issued four coupons and a purchase permit for 1 gal.

\*\*\*

**VOTE GAS.** Fuel-rationing regulations have been amended to permit special allotments of gasoline for cars carrying voters to and from the polls at general and primary elections and also to a duly qualified and bona fide candidates for public office so that they may campaign.

\*\*\*

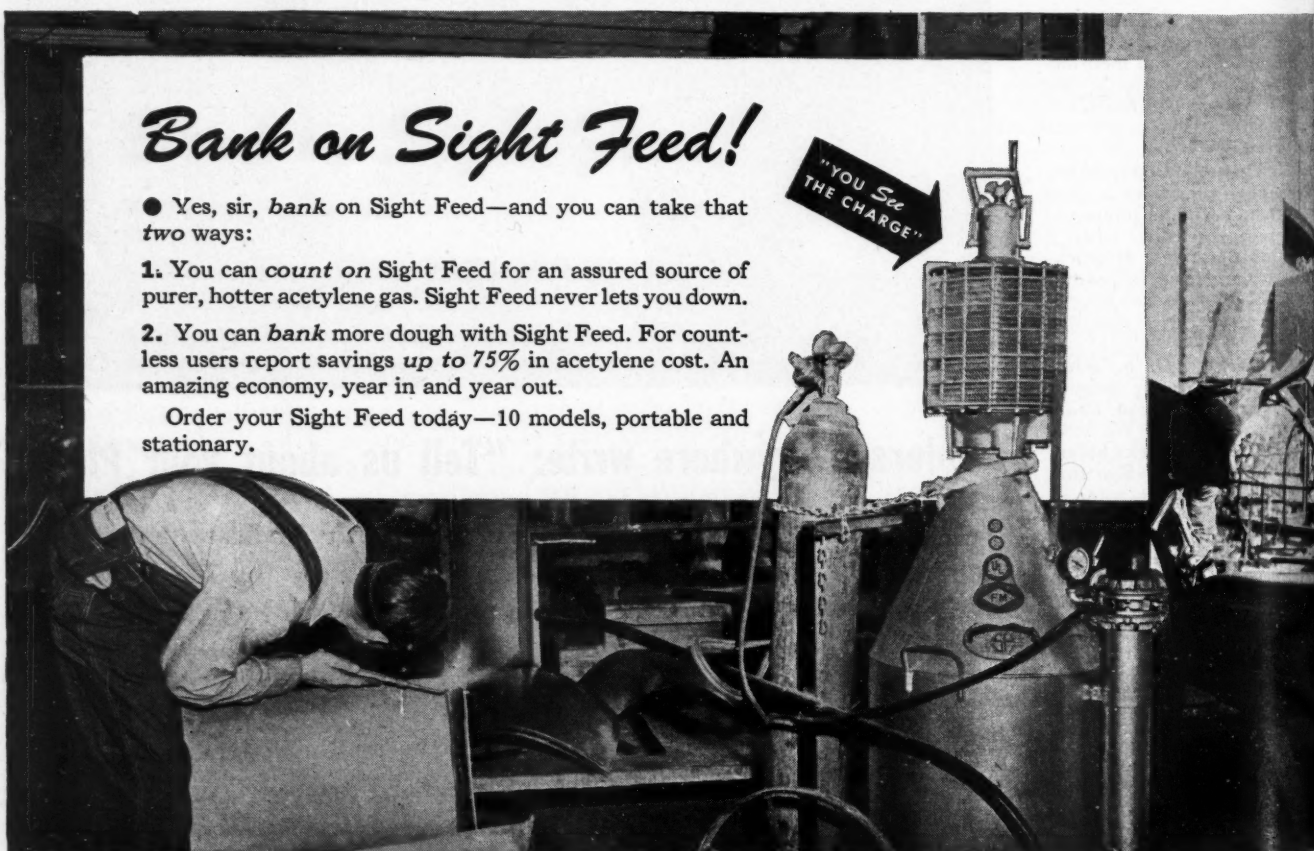
**TRUCK EQUIPMENT.** Beginning 1, operators or commercial motor vehicles must file applications for permission to purchase new equipment with the 142 ODT district offices instead of through ICC truck offices.

## Bank on Sight Feed!

● Yes, sir, *bank* on Sight Feed—and you can take that two ways:

1. You can *count* on Sight Feed for an assured source of purer, hotter acetylene gas. Sight Feed never lets you down.
2. You can *bank* more dough with Sight Feed. For countless users report savings *up to 75%* in acetylene cost. An amazing economy, year in and year out.

Order your Sight Feed today—10 models, portable and stationary.



THE *Sight Feed* GENERATOR COMPANY • SALES: RICHMOND, IND. • FACTORY: W. ALEXANDRIA, O.

## Check These Features of Black & Decker Heavy-Duty Grinders

Powerful Black & Decker Motors

Grease-Sealed Ball Bearings near ends of spindle  
minimize vibration

Extended Wheel Spindles\*

Tapered End Housings\* • High Center Line\*

Enclosed Wheel Guards meet safety regulations—can be adjusted radially or removed

Adjustable Tool Rests and Spark Shields

Toggle Switches and Rubber Feet

\*For increased clearance.



8" COMBINATION  
HEAVY-DUTY, BALL-BEARING  
BENCH GRINDER  
(Also 6" and 10" models)

## Engineered by Black & Decker for Leadership in Performance

Black & Decker Bench Grinders are standard equipment in automotive shops and industrial plants all over the country. They've got the *design* for easy work on odd-shaped pieces—the *speed* for tool sharpening, wire brushing, buffing and polishing—the *power* and *torque* for heavy-duty grinding and general shop work.

That's because each part in every Black & Decker Tool is specifically designed and made for the job it has to do. For example, Black & Decker uses no *stock* motors. The motor in any Black & Decker Tool is engineered and built by Black & Decker—to deliver maximum efficiency

and performance in that particular tool.

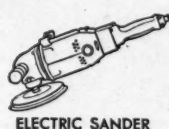
Engineering leadership and precision workmanship have made Black & Decker the world's largest manufacturer of Portable Electric Tools. And those same qualities explain why so many automotive shops are thankful today—for the built-in durability of Black & Decker Tools bought before the war.

If you need Black & Decker Tools, especially for work on war-essential vehicles, your Black & Decker Distributor will help you get them as soon as possible. The Black & Decker Mfg. Co., 727 Pennsylvania Ave., Towson 4, Maryland.



### WHIRLWINDS— for High-Speed Work

These Black & Decker Brushes have each tuft of wire held by a patented lock—separately, securely, to stay! Sizes: 4" to 12". Three brush widths. Three sizes of wire.



ELECTRIC SANDER

LEADING DISTRIBUTORS  EVERYWHERE SELL

# Black & Decker

PORTABLE ELECTRIC TOOLS



PORTABLE GRINDER



*Hurricane Bill says—*

**"CAR OWNERS  
APPRECIATE A  
BETTER WASH JOB,  
THAT'S WHY  
THEY COME BACK  
FOR MORE"**

- You just can't keep people away when they know they're getting more for their money. You hold your regular customers and attract new ones with

## **HURRICANE** *Auto Shampoo*

This modern shampoo method is quick and easy. It loosens all grease, film, bugs, etc. It's faster, and will make more money for you.

Send for FREE Sample  
(Enough for Four Washes)  
And FREE 8-Page Booklet  
On Modern Method of Car Washing

Order From Your  
Local Jobber or Distributor

### **LAKESIDE PRODUCTS**

343 SOUTH DEARBORN ST.  
CHICAGO 4, ILLINOIS

### **Promotes Parts Sales**

Robert M. Hendrixson has been appointed sales promotion manager of Nash service and parts, it was announced recently by H. C. Doss, vice president of Nash-Kelvinator Corp. in charge of Nash Motors Division.

Hendrixson, former supervisor of Chevrolet field service for Western United States, will direct the Nash dealer service program involving wartime maintenance of more than 500,000 passenger cars. His new responsibilities, Doss said, will also enable him to plan and execute an intensive postwar program.

Hendrixson, who joined the Chevrolet Motors Division of General Motors in 1926, was previously associated with the Ford Motor Company.

### **Heads Bendix Unit Sales**

Del E. Stuart has been appointed manager of production accounts of the Marshall-Eclipse Division of the Bendix Aviation Corp., it was announced recently by Fred C. Weyburne, general manager of the Troy, N. Y., plant.

Stuart has been connected with the automotive industry for the last 20 years. He was with Chevrolet, General Motors, in the central office engineering department from 1934 until he joined the Marshall-Eclipse organ-

ization this year. His headquarters will be at the division's Detroit office.

### **Western Sales Chief**

Dee Breen was recently appointed Western Division salesmanager of Littelfuse, Inc., with territory covering the Western states, and headquarters at the company's plant, El Monte, Cal. Before the war Breen was expeditor for the Chrysler Corp. From this position he was called to Washington to serve as expeditor of materials for the U. S. Signal Corps.

This work completed, he was called to Chicago as expeditor for Littelfuse. He was speedily moved up to the office of production manager for Littelfuse's Chicago plant.

### **Named Sales Assistant**

G. S. Staunton, formerly sales manager of the Ternstedt Manufacturing Division of General Motors Corp., in Detroit, has been appointed assistant automotive sales director of the Bendix Products Division of Bendix Aviation Corp., it was announced June 7 by Frank B. Willis, director of sales.

Until entering the automotive field in Detroit in 1936, Staunton was affiliated with the du Pont company in supervisory and sales-executive capacities. He is a graduate of Rensselaer Polytechnical Institute.

Be  
100%  
With  
10%  
●  
Buy  
War  
Bonds



**...for better clearance**

Here's one of the many Plomb Tools speeding war work. It represents the most compact line of Offset Box Wrenches on the market—covering the greatest number of opening sizes with the minimum number of wrenches—available in both long and short types. . . . Features like this make Plomb

Tools the choice of professional mechanics in all industries. You will find the tools you need at Plomb dealers, everywhere.—  
Plomb Tool Company  
Los Angeles, Calif.



**FINE HAND TOOLS FOR ALL INDUSTRIES**

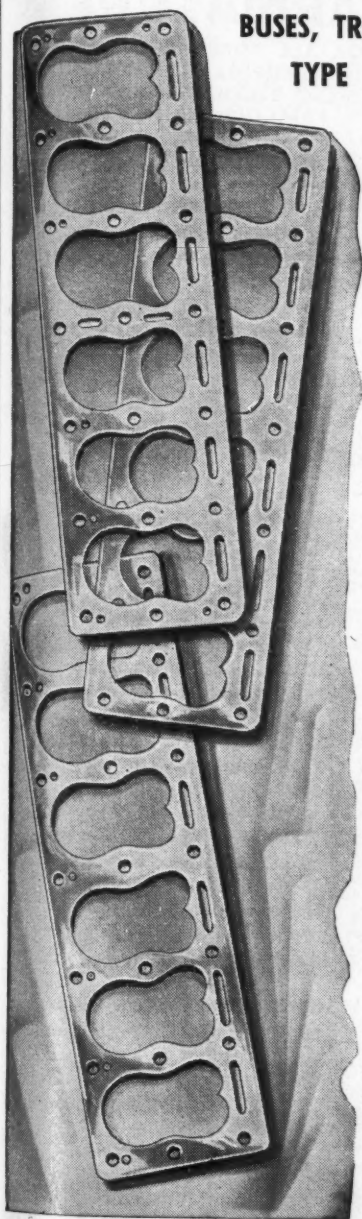


# FITZGERALD

## THE COMPLETE GASKET SERVICE



GASKETS FOR PASSENGER CARS,  
BUSES, TRACTORS—FOR EVERY  
TYPE OF INSTALLATION



Gaskets of highest quality—made from the finest materials—of all approved types of construction.

Gaskets for every need, including the famous Fitzgerald Bulldog Gasket—a tougher gasket for a tough job—best for heavy duty service.

Install Fitzgerald Gaskets. That means 100 per cent gasket performance for your customers, profitable business for you.

Contact your Fitzgerald jobber for service. The Fitzgerald Manufacturing Company, Torrington, Conn. — Branches, Chicago and Los Angeles—Canadian FITZGERALD, Limited, Toronto.

# FITZGERALD GASKETS

THE COMPLETE LINE THAT COMPLETELY SATISFIES

# 5

## SIMPLE SOLDERING RULES

### to make the job stay fixed

- 1 Scrape surfaces clean.
- 2 Use a hot, carefully tinned iron.
- 3 Pre-heat joints and make them mechanically secure before applying solder.
- 4 Flow the solder onto the pre-heated joints—don't drip it onto the job.
- 5 Use a quality product like Kester Acid-Core Solder. Kester flux and alloy—both in the right amount—are applied in one simple operation. Work is fast and sure—guesswork is eliminated. Use Kester Acid-Core Solder for all around repair work; Kester Rosin-Core Solder for electrical work. Both are available from your jobber.



☆ BUY WAR BONDS ☆

KESTER SOLDER COMPANY  
4242 Wrightwood Ave., Chicago 39, Illinois

Eastern Plant: Newark, N. J.  
Canadian Plant: Brantford, Ont.



# KESTER

## Cored Solders

FOR EVERY AUTOMOTIVE USE



Measures the recoil of springs up to 7" (free length) and 2½" in diameter when compressed to any predetermined length. Easy to "set," easy to operate, easy to read. No multiple dials. Simply read the dial of any accurate torque wrench at the moment the built-in-tone device sounds! Inspect, test, check or measure the recoil of springs in a few seconds! Accurately match spring sets in a few minutes. Invaluable in testing laboratories, heat-treating, inspection, assembly and repair departments. Eliminate costly guess-work! (NB: Torque wrench not included unless specified.)

Write for Bulletin ST-19



**BOY! IT'S A GOOD THING I'VE GOT SOUTHERN BRAKE-LINING**  
REG. U. S. PAT. OFF.

**SOUTHERN**  
FRICTION MATERIALS CO. - CHARLOTTE, N.C.

TAPERED ROLLER BEARINGS

**Tyson**

ROLLER BEARING CORP.  
MASSILLON, OHIO

## Air Sander

A new air-driven sander known as "Mity-Midget" has just been announced by National Air Sander, Inc., 2712 West State St., Rockford, Ill.

The manufacturers claim that the "Mity-Midget" meets all the requirements of a good block sander. The unit operates on 50 lb. air pressure and can be used either wet or dry. The sander is 5½ in. long, 4¼ in. high and weighs 3½ lb. The sanding pad does not revolve, but has a circular motion so that each grain of sand scribes a 3/16 in. circle. The motor is sealed by a synthetic-rubber housing and operates on pre-lubricated ball bearings which require no further attention. One of the outstanding features of the sander is the absence of vibration which allows the operator to use the unit continuously without fatigue.

## Wins Security Award

National Security Awards, given by the U. S. Office of Civilian Defense for the maintenance of a superior standard of plant protection and security, were awarded to the American Hammered Piston Ring and Bartlett Hayward divisions of Koppers Co. in Baltimore, at ceremonies held at the former's plant, June 15.

Presentation of award certificates and pennants was made by Col. Henry A. Reninger, acting director, Third Civilian Defense Region, and were accepted for American Hammered by Edward B. Whitman, and for Bartlett Hayward by Lt. Col. Randolph Coyle, USMC (Ret.). Selected workers from both plants were presented with token lapel insignia buttons.

## Returns to Pontiac

D. U. Bathrick, general sales manager of Pontiac, has returned to his post, it is announced by H. J. Klingler, Pontiac general manager.

Bathrick has been in Washington for the last two years, first as assistant to R. H. Grant when the latter was directing the General Motors Washington office and then, upon Grant's retirement, in charge of the office.

## LINCOLN LUBRICATING EQUIPMENT

plays an important part in  
**WAR PROGRAM**

by providing fast, thorough, and economical lubrication of cars, trucks, buses and other motor vehicles so important in the transportation of war materials and men engaged in war production. Ask your nearest jobber, or write us for details on this equipment.

**LINCOLN ENGINEERING COMPANY**  
General Offices, St. Louis, Mo.

A 41-12

**HEADQUARTERS**

**MOOG**  
SPRING SUSPENSION SERVICE

**ELECTRICALLY HEAT TREATED SPRINGS**

**COIL ACTION REPLACEMENT PARTS**  
for  
**COMPLETE SPRING SUSPENSION SERVICE**

**MOOG INDUSTRIES, INC., ST. LOUIS 14, MO.**  
ST. LOUIS SPRING CO. MOOG COIL ACTION PARTS CO.  
MOOG PISTON RING COMPANY

## REWOUND ARMATURES

**FOR ALL POPULAR MAKE CARS  
IMMEDIATE DELIVERY  
ALSO RECONDITIONED USED  
ARMATURES AND PARTS**

We stock only genuine used parts. All are thoroughly tested and cleaned with the most modern methods and equipment. Each part carries our money-back guarantee.

Write for price list B

**HASCO PRODUCTS, INC.**

131 Park Ave., Lyndhurst, New Jersey

## BALDOOR

ST. LOUIS, MO.

**BATTERY CHARGERS  
BATTERY TESTERS  
SHOP GRINDERS  
ELECTRIC MOTORS**

Make Big Profits on Small Investment in

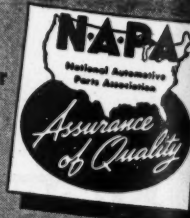
## SHURHIT IGNITION PARTS



Ask your Shurhit jobber or write us for details on General Ignition Assortments of fast-moving parts...  
Contact Points...  
Condensers...  
Rotors... Caps...  
Coils...  
Switches, etc.

**SHURHIT PRODUCTS, INC.**  
Waukegan, Ill.

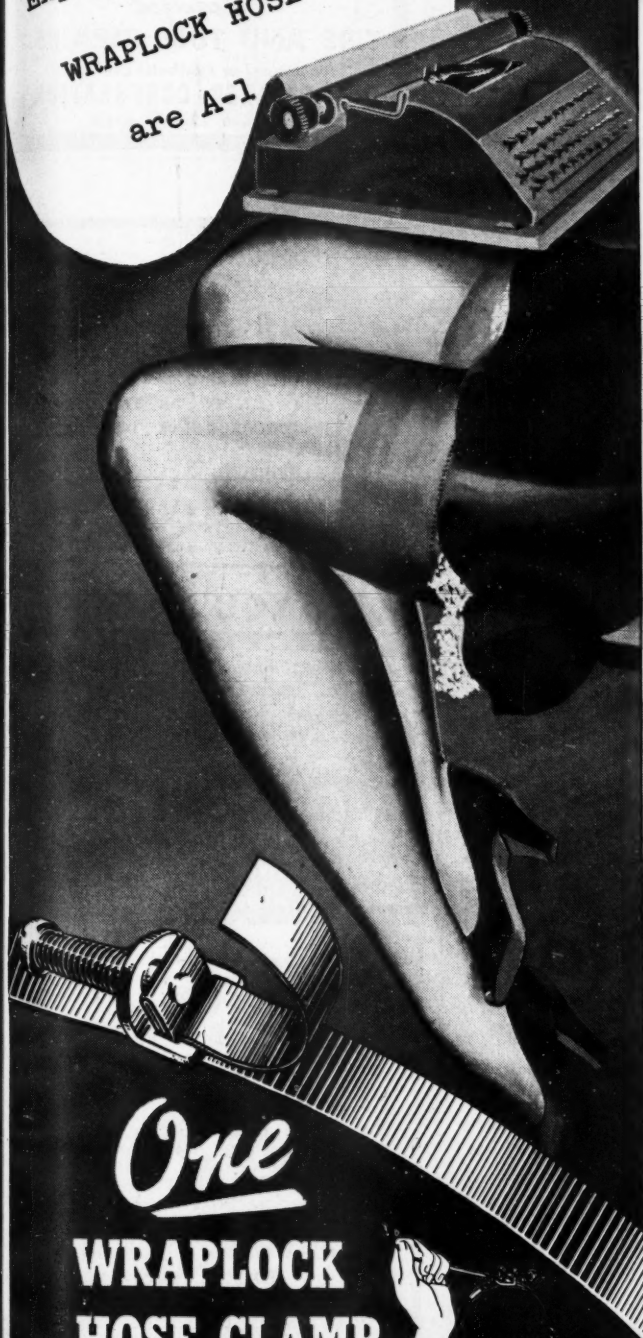
See Your  
**NAPA Jobber**  
For Prompt  
Service on  
Automotive  
Parts!



A Nation-Wide Organization of  
Independent Warehousing Distributors

**NATIONAL AUTOMOTIVE PARTS ASSOCIATION**  
Executive Offices: 705 Fox Building, Detroit

Dear Sir:  
Experience Proves that  
WRAPLOCK HOSE CLAMPS  
are A-1

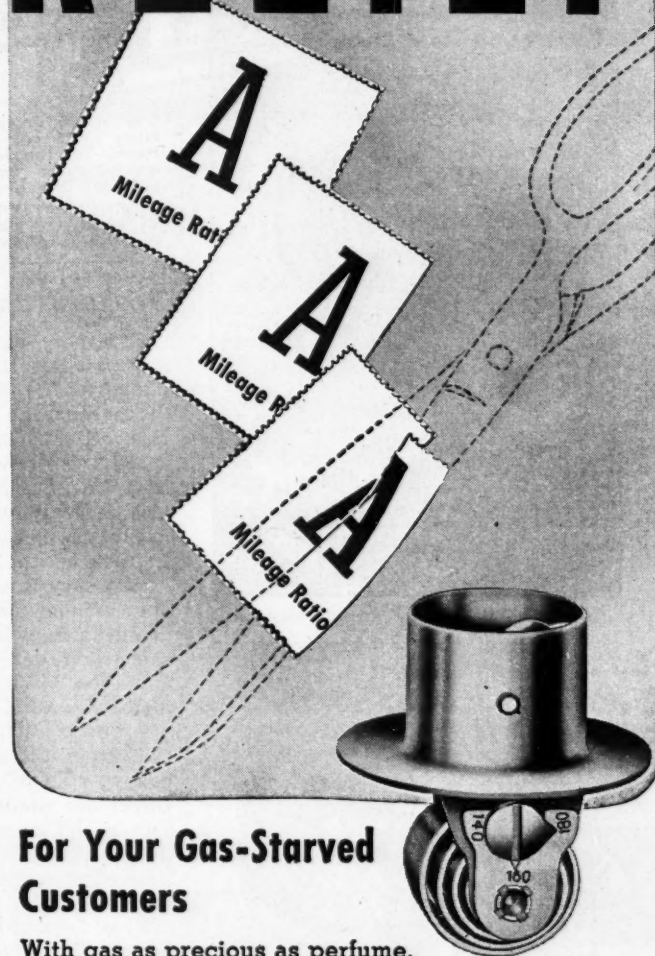


*One*  
**WRAPLOCK  
HOSE CLAMP**

*fits ANY Size Hose Securely*

**ACTUS PRODUCTS CO.**  
MOUNT VERNON · NEW YORK

# RELIEF



## For Your Gas-Starved Customers

With gas as precious as perfume, you do your customers a service when you suggest a Dole Replacement Thermostat.

The original thermostat is installed by the car builder to maintain the most efficient operating temperature for the motor—preventing sludge, excessive cylinder wear—saving oil and gasoline. As moving parts, thermostats are subject to wear, need replacement to keep gas mileage up, with quick warm-up and good pick-up.

Customers understand this readily. It's a favor as well as a sale when you show them the need for

# DOLE

*Replacement*  
**THERMOSTATS**

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### Brake-Drum Lathe

A heavier base-casting, designed to accommodate the brake drums of airplane wheels, is the newest feature of the current Van Norman No. 303 Brake Drum Lathe, according to the Automotive Division of the Van Norman Co., Springfield 7, Mass. Built out several inches more than formerly, the base permits plane wheels to fit under that section.

Also new is the independent heavy-duty grinder attachment which finish-grinds heavy cast-iron drums at the same time the drums are being turned and thus saves the time of one complete operation.

A bronze-backed babbitt bearing surface of 144 sq. in. supports a 3-in. hollow spindle, which not only revolves but slides horizontally, permitting easier access to the interior of the drums, faster set-up, more rigid support of work and easy introduction of grinder.

Five feeds forward and five feeds in reverse, together with three speeds, assure proper and necessary speeds and feeds for all brake drums.

The crane attachment, which becomes an integral part of the machine when installed, will support the heaviest drums and wheels.

### Convention Delegate

At the recent preliminary election held in Reading, Pa., Clarence P. Bowers, president of Bowers Battery and Spark Plug Co., was elected delegate to the National Democratic Convention to be held in Chicago, Ill., starting July 19.

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**Army-Navy "E" Awards**

Automotive Division, the Stude-  
baker Corp., South Bend, Ind.

The Manhattan Rubber Mfg. Divi-  
sion, Raybestos-Mahattan, Inc., Pas-  
saic, N. J. (Star)

Caterpillar Tractor Co., East Pe-  
oria, Ill. (Star)

Oldsmobile Division, General Mo-  
tors Corp., Lansing, Mich. (Third  
star)

Ford Motor Co., Chester, Pa. (Sec-  
ond star)

McCord Radiator & Mfg. Co., De-  
troit, Mich. (Fourth star)

Blackhawk Manufacturing Co.,  
Milwaukee, Wis. (Star)

Plomb Tool Co., Los Angeles, Cal.  
(Second star)

U. S. Rubber Co., Hogansville, Ga.

Wagner Electric Corp., St. Louis,  
Mo. (Second Star)

**MEWA Plans Convention**

Upon suggestion of a good many  
members and manufacturers who say  
they found the recent MEWA Chicago  
and New York Conferences especially  
valuable, the Motor and Equipment  
Wholesalers Association is making  
plans for a national convention the  
latter part of 1944, provided condi-  
tions at the time do not preclude or  
make inadvisable the holding of such  
event.

The recent regional conferences  
took on substantial characteristics of  
national meetings despite the fact  
they were projected as regional  
gatherings only.

**William A. James**

William A. James, 55, advertising  
manager of Hudson Motor Car Co. for  
18 years until his retirement in 1940,  
died June 3 at Detroit after a short  
illness.

James joined the sales department  
at Hudson in 1918 and became adver-  
tising manager in 1922. He retired  
in 1940 because of poor health. For  
the past nine months he had been  
associated with the Simons-Michelson  
Co., Detroit advertising agency. He  
was a former director of the Audit  
Bureau of Circulation.

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